TEXTILE TECHNOLOGY DIGEST

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Abstracts

ORGANIC FIBERS I

Artificial filaments. Method of manufacturing artificial filaments. Wayne A. Sisson (to American Viscose Corporation). USP 2 443 711, June 22, 1948.

A method is described of producing compound filaments by forcing two or more different filament-forming materials through two or more spinnerets placed in close juxtaposition. The separate filaments are drawn together while in a plastic condition and before passing into a setting medium, which results in their being united into a single compound filament.

GNR TTD: 9-48

Fibers. Industrial fibers. Summary of figures of production, trade and consumption relating to cotton, wool, silk, flax, jute, hemp, mohair, coir and rayon. Compiled in the Intelligence Branch of the Commonwealth Economic Committee. London. H. M. Stationery Office, 1948. 137 pp.

Reviewed in *Nature 161,* No. 4103, 961-2 (June 19, 1948). TTD: 9-48

Vegetable fibers I 1

Alginate fibers. Textiles from seaweed. Wm. H. Cody. *Am. Dyestuff Reptr. 37,* No. 9, 283-4, 286, 289 (May 3, 1948).

A general review is given of fibers made from calcium alginate, with emphasis upon spinning methods and upon the outstanding properties of the fibers, particularly their complete solubility in alkali. Alkali-resistant treatments and the utilization of the alkali solubility are discussed. 35 references.

WPU, jr. TTD: 9-48

Bast fiber. Crushing and scraping device for bast fiber stalks. Rudolf Dittrich. Ger. P. 705 542, Aug. 23, 1941. 4 pp. *Bibl. Sci. Ind. Reports 5,* 648 (May 16, 1947).

Drawing included. TTD: 9-48

Bast fiber. Device for producing spinnable fibers from bast fiber stalks, particularly ramie stalks. Kurt Frische. Ger. P. 722 652, July 15, 1942. 5 pp. *Bibl. Sci. Ind. Reports 5,* 561 (May 9, 1947).

TTD: 9-48

Bast fiber. Device for separating the fibers from crushed, unretted bast-fiber stalks. Dittrich. Maschinenbau und Metalltuchfabrik A. G. Ger. P. 682 827, Aug. 23, 1941. 3 pp. *Bibl. Sci. Ind. Reports 5,* 649 (May 16, 1947).

Drawing included. TTD: 9-48

Bast fiber. Device for separating the fibers from crushed, unretted bast-fiber stalks. Dittrich. Maschinenbau und Metalltuchfabrik A. G. Ger. P. 702 996, June 28, 1941. 5 pp. *Bibl. Sci. Ind. Reports 5,* 649 (May 16, 1947).

Drawings included. TTD: 9-48

Bast fiber. Method for the continuous production of long fibers from bast-fiber stalks. Rudolf Dittrich. Ger. P. 714 750, Dec. 5, 1941. 4 pp. *Bibl. Sci. Ind. Reports 5,* 561 (May 9, 1947).

Drawing included. TTD: 9-48

Bast fiber. Procedure for preparing properly aligned, long bast fibers for hackling. Gminder. Ulrich Gminder GmbH, Reutlingen. Ger. P. 710 588, Sept. 17, 1941. 1 p. *Bibl. Sci. Ind. Reports 5,* 648 (May 16, 1947). TTD: 9-48

Bast fiber. Process and device for producing degummed fibers from bast fiber. Korff. M. E. Korff Textilfaser Komm.-Ges. Ger. P. 723 363, Aug. 3, 1942. 6 pp. *Bibl. Sci. Ind. Reports 5,* 561 (May 9, 1947). TTD: 9-48

Bast fiber. Rocker for bast fiber. Apelt & Jendrusch. Jos. Monforts. Ger. P. 704 508, Apr. 1, 1941. 4 pp. *Bibl. Sci. Ind. Reports 5,* 649 (May 16, 1947).

Drawing included. TTD: 9-48

Bast fiber. Uses of broom fiber, Sicily. Anon. *Foreign Commerce Weekly 32,* No. 5, 34-5 (July 31, 1948).

Characteristics and uses of broom fiber are briefly discussed, with a view to future commercial production.

It is predominantly cellulose in composition and can be intermixed with wool, silk, rayon, or any other fiber now in use. TTD: 9-48

Cellulose and soda. Absorption and fixation of caustic soda by natural cellulose. Andre Breguet, Robt. Viatte, & Henry Perra. *Comp. rend. 226,* No. 24, 1987-9 (June 14, 1948).

The amount of swelling of native cellulose in baths of increasing NaOH concentration was determined by means of a centrifuge. The results were studied by plotting the water of swelling and the amount of NaOH absorbed as ordinate against the increasing NaOH concentration as abscissa. The water of swelling is the difference between the centrifuged alkali cellulose and the total alkali and dry cellulose. TTD: 9-48

Cellulose structure. The kinetics of cellulose degradation and the long period structure of the cellulose molecule. G. V. Schultz. *J. Polymer Sci. 3,* No. 3, 365-70 (June, 1948); *in German.*

Experimental evidence on the long period structure of the cellulose molecule indicates the existence of chemically irregular or loose bonds which occur about every 500 glucosidic units. The heterogeneity of the molecular weight distribution was measured as a function of the degree of degradation. Two different constant rates and activation energies were determined from kinetic studies made on hydrolytically and oxidatively degraded cellulose from cotton and ramie. 14 references. TTD: 9-48

Cotton picker spindle. Cotton picker spindle structure. David B. Baker (to International Harvester Co.). USP 2 440 767, May 4, 1948.

The spindle assembly of a cotton-picking machine mounts a hollow, replaceable barb-bearing cap to minimize the inertia of the assemblies and the necessary starting torque.
JHB TTD: 9-48

Fiber from bark. Machine for producing spinnable fibers from tree bark. Luise Kulka. Ger. P. 683 279, Feb. 4, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 649 (May 16, 1947).

Drawings included. TTD: 9-48

Flax. Device for transferring retted flax stalks from a rinsing and crushing machine to the conveyor of a dryer. Haas. Friedrich Haas Maschinenfabrik Komm.-Ges. Ger. P. 721 948, June 24, 1942. 3 pp. *Bibl. Sci. Ind. Reports 5,* 561 (May 9, 1947). TTD: 9-48

Hemp. Device for loosening wet-separated and dried flossy bast from hemp. Rudolf Dittrich. Ger. P. 714 751, Dec. 11, 1941. 4 pp. *Bibl. Sci. Ind. Reports 5,* 648 (May 16, 1947).

Drawing included. TTD: 9-48

Hemp. Hemp—production and utilization. Anne L. Ash. *Econ. Botany 2,* No. 2, 158-69 (Apr.-June, 1948).

Methods for growing hemp and its preparation are described. It is compared unfavorably with cotton, abaca, jute, flax, and other fibers. Recent research relative to retting and scutching of hemp indicates promise of improvement in the processing qualities of its fibers. TTD: 9-48

Hemp. Machine for producing spinnable fibers from hemp stalks. Hugo Bindler. Ger. P. 707 439, June 21, 1941. *Bibl. Sci. Ind. Reports 5,* 561 (May 9, 1947).

Drawings included. TTD: 9-48

Linseed straw. Processing linseed straw. Anon. *Fibres 8,* No. 11, 364 (Nov. 1947).

The Windrum fiber making machine, designed for the purpose of extracting spinnable fiber from unretted linseed straw contains fewer rollers than the pre-breaker used on flax scutching machines. The spinning range of unretted fiber can be materially increased by subjecting it to a caustic soda boil. A considerable amount of linseed fiber treated in this manner was processed on cotton machinery in Axis countries during the war. TTD: 9-48

Ramie. Device for obtaining fibers suitable for spinning from strips of ramie bark which have been stripped of wood. Kurt Frische. Ger. P. 712 113, Oct. 13, 1941. 4 pp. *Bibl. Sci. Ind. Reports 5,* 648 (May 16, 1947).

Drawing included. TTD: 9-48

Ramie. Ramie harvesting. Gilbert Brereton (to Eimar Corp.). USP 2 443 296, June 15, 1948.

A machine is described to cut the plant, remove the bark, and separate the fibers from the interior gummy core, in successive operations, so as to deliver ramie fibers in condition to be spun. TTD: 9-48

Ramie. Ramie—"Textile of Tomorrow?" Anon. *Jute & Canvas Rev. 19,* No. 234, 7 (Mar. 1948).

E. K. Mao, a Chinese chemical engineer, stated in *Far Eastern Economic Review* (Dal' Nevostochnyi Informatsionnyi Biulleten') that ramie is about to be introduced to the world in quantity and that a decorticating machine, discovered by Allied troops on a tiny Japanese-occupied island during the war, is likely to be instrumental in increasing ramie production. The properties of ramie are briefly noted. TTD: 9-48

Vegetable fibers. Apparatus for producing fiber from vegetable growth materials. Philip G. Deuchler (to Certain-Teed Products Corp.). USP 2 427 495, Sept. 16, 1947.

This device covers an improvement to the Asplund process for the preparation of vegetable fibers for felt or paper. A compartment is provided between the treating chamber and the discharge end for further modifying and removing the encrusting substances.
SPH TTD: 9-48

Waste product. Waxes from sisal waste. W. Politzer. *Chemistry & Industry* No. 26, 408-9 (June 26, 1948).

A hard, tough wax which may be useful in the manufacture of polishes, can be extracted from sisal waste. A yield of 2-3 lbs. of wax can be obtained from each ton of fresh leaf from the retted flume tow.
LCL TTD: 9-48

Water in fibers. The hydration of native cellulose. Chas. Legrand. *Compt. rend. 226,* No. 24, 1983-4 (June 14, 1948).

X-ray diffraction studies of ramie and cotton fibers gave evidence of the fixation of water between the hydroxyl groups. It could not be determined, however, whether a definite compound had been formed or a topochemical reaction had occurred. The results obtained agreed with those determined chemically by G. Champetier.
TTD: 9-48

COTTONSEED AND COTTONSEED PRODUCTS. Their chemistry and chemical technology. Alton E. Bailey, Ed. Interscience Publishers, 215 Fourth Ave., New York 3, N. Y., 1948. 936 pp.; price $17.00.

Reviewed in *Chem. Eng. News 26,* No. 31, 2313 (Aug. 2, 1948). TTD: 9-48

Animal fibers I 2

Animal fibers. Method for producing fibers from fiber-containing animal raw materials. Becker & others. Carl Freudenberg Firma. Ger. P. 674 208, June 12, 1941. 3 pp. *Bibl. Sci. Ind. Reports 5,* 648 (May 16, 1947). TTD: 9-48

Chemistry of wool. Combination of wool protein with heavy metal salts as a function of pH. II. Potassium dichromate. K. S. LaFleur. *Am. Dyestuff Reptr. 36,* No. 21, 616-18 (Oct. 20, 1947).

Swatches of woolen cloth were immersed in 1/100 baths of N/10 potassium dichromate containing various amounts of sulfuric acid or sodium hydroxide, and were allowed to come to equilibrium either at room temperature or at the boil. Rinsed and dried swatches were then analyzed for sulfate and for chromic oxide. Bath aliquots were titrated for total acid or base and for residual dichromate, and pH values were determined. Hydrogen ion and dichromate ion appeared to be lost from the bath in about equivalent amounts, and it thus appears that dichromic acid has formed and reacted with the wool as H^+ and $HCr_2O^-_7$. The initial combination of dichromic acid with wool is considered as probably dependent on the available ionized amino groups; but the notable tendency of chromium to form complexes, and the comparative irreversibility of wool-dichromic acid compounds seem to indicate that this initial union becomes strengthened with other bonds. This work is being continued with other ions in an effort to correlate theoretical dissociation curves of wool protein with empirical curves of wool combination with various ions.
WPU, jr. TTD: 9-48

Friction between fibers. Influence of some anti-shrink treatments on the friction between wool fibers. Joel Lindberg & Nils Gralen. *Nature 162,* No. 4107, 112-3 (July 17, 1948).

A new apparatus has been built for the measurement of the friction between 2 fibers. The principle is that 2 fibers are twisted a few turns, and the four fiber ends loaded with equal forces, P_1. The load at one of the ends is increased until slipping occurs. If the necessary force is P_2 and the angle between the fiber ends is β, the coefficient of friction is given by the formula

$$\mu = \frac{1 n P_2/P_1}{\beta \pi n}$$

Wherein n is the number of turns. Measurements were made on wool fibers treated with sodium hypochlorite at pH 1, and others treated with alcoholic potassium hydroxide. The results are plotted on graphs. TTD: 9-48

Scouring wool. Method of and apparatus for scouring wool. Bryan Leonard. USP 2 442 012, May 25, 1948.

Wool is floated in a scouring liquid in a bowl, and while floating is propelled in the desired direction by directing jet or sprays of scouring liquid against it.
GHC TTD: 9-48

Wool. A study of methods for determining the ash content of wool. G. C. LeCompte & J. L. Parkes, USDA. *Am. Dyestuff Reptr. 36,* No. 20, 571-2 (Oct. 6, 1947).

A number of different methods by which determinations have been or could be made of the ash content of wool are listed, and the results using these methods are compared for experiments with 3 different samples of scoured wool. A recommended compromise between accuracy and convenience comprises the use of a furnace at 600° C for the ashing operation.
WPU, jr. TTD: 9-48

Wool. Value of wool. Lewis A. Hird, Saml. Hird & Sons, Inc. & Natl. Assoc. of Wool Mfrs. *Papers Am. Assoc. Textile Technologists 3,* No. 2, 65-71 (Mar. 1948).

The cause of shrinkage, felting, the moisture content of wool, and synthetic wool-like fiber are discussed.

TTD: 9-48

Artificial fibers I 3

Artificial fiber. Procedure and device for opening after-treated and dried artificial fiber ribbons. Kern. Phrix-Arbeitsgemeinschaft. Ger. P. 715 801, Jan. 7, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 650 (May 16, 1947).

Drawing included. TTD: 9-48

Artificial ribbons. Device for the selective after-treatment of cut or endless ribbons of artificial fibers. Stuhlmann. Rheinische Zellwolle A. G. Ger. P. 715 800, Jan. 7, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 650 (May 16, 1947).

Drawing included. TTD: 9-48

Artificial staple. Method and device for the after-treatment of artificial fibers which are cut or torn. Kleine. I. G. Farbenindustrie A. G. Ger. P. 708 040, July 10, 1941. 5 pp. *Bibl. Sci. Ind. Reports 5,* 649 (May 16, 1947).

Drawings included. TTD: 9-48

Cutting fibers. Device for cutting endless synthetic fiber ribbons by means of needles that move up and down. Schmitt. Sächsische Textilmaschinenfabrik vorm. Rich. Hartmann A. G. Ger. P. 710 194, Sept. 6, 1941. 4 pp. *Bibl. Sci. Ind. Reports 5,* 650 (May 16, 1947).

Drawing included. TTD: 9-48

Cutting fibers. Device for cutting endless synthetic fibers. Schmitt. Sächsische Textilmaschinenfabrik vorm. Rich. Hartmann A. G. Ger. P. 710 195, Sept. 6, 1941. 3 pp. *Bibl. Sci. Ind. Reports 5,* 650 (May 16, 1947).

Drawing included. TTD: 9-48

Cutting thread. Device for cutting an endless skein of synthetic threads. Bartunek & Maxton. Vereinigte Glanzstoff-Fabriken A. G. Ger. P. 724 146, Aug. 19, 1942. 3 pp. *Bibl. Sci. Ind. Reports 5,* 563 (May 9, 1947). TTD: 9-48

Fiber from peat. Method of producing fibers from peat. Karl Neynaber. Ger. P. 713 561, Nov. 10, 1941. 2 pp. *Bibl. Sci. Ind. Reports 5,* 562 (May 9, 1947). TTD: 9-48

Tearing cellulose filaments. Device for producing cellulose fibers from endless bands of synthetic threads by tearing. Kuniiti Tutihasi. Ger. P. 722 651, July 15, 1942. 3 pp. *Bibl. Sci. Ind. Reports 5,* 563 (May 9, 1947). TTD: 9-48

Yarn advancing reel. Yarn advancing reel. Richard W. Stanley (to Am. Viscose Corp.). USP 2 444 071, June 29, 1948.

A yarn-advancing reel is described which is adaptable to either a cantilever design or a structure supported at both ends. The thread advancing action is substantially uniform throughout the length of the mechanism and may be adjusted with respect to the rotation frequency of the reel. TTD: 9-48

Rayons I 3 a

Cellulose derivatives. Process for preparing solutions with improved qualities from cellulose derivatives. Schenck. Schering A. G. Ger. P. 715 090, Dec. 16, 1941. 3 pp. *Bibl. Sci. Ind. Reports 5,* 625 (May 16, 1947). TTD: 9-48

Cellulose solution. Process of making a solution of cellulose. Aart Buurman (to Am. Enka Corp.). USP 2 444 022, June 29, 1948.

In preparing solutions of cellulose in sodium zincate or sodium stannate, simplification of conducting the preliminary degradation *in situ* is made by adding cellulose to a mixture of hydrogen peroxide and the sodium zincate or stannate solution, allowing sufficient degradation to occur, destroying excess peroxide with formaldehyde, and cooling to below 0°C to effect solution.

MC TTD: 9-48

Cutting rayon. Device for carrying out the method of cutting endless artificial fiber strands. Carl Hamel A. G. Ger. P. 668 441, Dec. 9, 1941. 3 pp. *Bibl. Sci. Ind. Reports 5,* 648 (May 16, 1947).

Drawings included. Supplement to patent 653 977. TTD: 9-48

Cutting rayon. Device for cutting endless artificial fiber strands. Carl Hamel A. G. Ger. P. 681 400, Mar. 11, 1942. 3 pp. *Bibl. Sci. Ind. Reports 5,* 648 (May 16, 1947).

Drawing included. Supplement to patent 678 039. TTD: 9-48

Cutting rayon. Knife for cutting endless artificial fiber strands. Steinmetz. Carl Hamel A. G. Ger. P. 704 975, Apr. 12, 1941. 3 pp. *Bibl. Sci. Ind. Reports 5,* 648 (May 16, 1947).

Drawing included. TTD: 9-48

Cutting rayon. Device for cutting endless artificial fiber strands. Hamel & Steinmetz. Carl Hamel A. G. Ger. P. 707 770, July 3, 1941. 4 pp. *Bibl. Sci. Ind. Reports 5,* 648 (May 16, 1947).

Drawing included. TTD: 9-48

Films. Production of films of high mechanical strength from solutions of acetyl cellulose. Ossenbrunner. I. G. Farbenindustrie A. G. Ger. P. 719 822, Apr. 23, 1942. 3 pp. *Bibl. Sci. Ind. Reports 5,* 621 (May 16, 1947). TTD: 9-48

Finishing rayon fibers. Procedure and device for applying a finishing treatment to ribbons of synthetic rayon in a continuous process. Zellwolle- & Kunstseide-Ring GmbH. Ger. P. 719 200, Apr. 1, 1942. 5 pp. *Bibl. Sci. Ind. Reports 5,* 651 (May 16, 1947).

Drawing included. TTD: 9-48

High strength rayon. Production of rayon. Kenneth M. McLellan (to Industrial Rayon Corporation). USP 2 427 993, Sept. 23, 1947.

A method of making rayon is described whereby the stretching operation is performed in two or more steps to reduce the tension in the yarn and also the stresses in the thread-advancing reel.
SPH TTD: 9-48

Plasticizer. Plasticizers for films made of regenerated cellulose or cellulose formate. König. Koepp (Rudolph) & Co. Ger. P. 717 880, Feb. 25, 1942. 2 pp. *Bibl. Sci. Ind. Reports 5,* 623 (May 16, 1947). TTD: 9-48

Rayon process. Device for carrying out the method of producing cellulose fibers in a continuous process. Witte. Vereinigte Glanzstoff-Fabriken A. G. Ger. P. 707 948, July 8, 1941. 3 pp. *Bibl. Sci. Ind. Reports 5,* 651 (May 16, 1947).

Drawing included. Supplement to patent 703 881. TTD: 9-48

Rayon production. Device for carrying out the method of production and after-treatment of endless artificial fiber strands in a continuous process. Carl Hamel A. G. Ger. P. 680 676, Jan. 5, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 648 (May 16, 1947).

Drawing included. Supplement to patent 666 744. TTD: 9-48

Rayon production. Device for carrying out the method of production and after-treatment of endless artificial fiber strands in a continuous process. Carl

Hamel A. G. Ger. P. 680 677, Jan. 5, 1942. 5 pp. *Bibl. Sci. Ind. Reports 5,* 649 (May 16, 1947).

Drawing included. Supplement to patent 666 744. TTD: 9-48

Rayon spinning. Device for rotary spinning of artificial fibers. Karl Berndt. Ger. P. 705 881, May 13, 1941. 3 pp. *Bibl. Sci. Ind. Reports 5,* 560 (May 9, 1947).

Drawing included. TTD: 9-48

Rayon staple. Rayon staple development; technology key to future. Harold Ashton, Courtaulds, Ltd. *Papers Am. Assoc. Textile Technologists 3,* No. 3, 133-44 (June, 1948).

Existing spinning processes are not adapted to handle rayon staple. A satisfactory sliver making technique and long drafts, applicable to the full range of fiber dimension, should be developed. A list of dyes available to cotton spinners is given. Rayon staple-cotton blends are discussed and diagrams are given showing the effects of mixing various kinds of cotton with fibro. A discussion of this paper is included. TTD: 9-48

Rayon staple. Device for the subsequent treatment of freshly cut bundles of artificial fibers. R. Wolf Maschinenfabrik Buckau A. G. Ger. P. 699 659, Dec. 4, 1940. 4 pp. *Bibl. Sci. Ind. Reports 5,* 651 (May 16, 1947).

Drawing included. TTD: 9-48

Rayon thread. Device for producing rayon threads with varying dimensions. Walouch. Carl Hamel A. G. Ger. P. 723 329, Aug. 3, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 561 (May 9, 1947). TTD: 9-48

Reclaiming film. Process for working up waste film and the like made of cellulose esters or ethers. Hermann Plauson & F. Karl Jähn. Ger. P. 728 643, Dec. 1, 1942. 3 pp. *Bibl. Sci. Ind. Reports 5,* 624 (May 16, 1947). TTD: 9-48

Spinning funnel bracket. Rayon spinning funnel bracket. Wilbur N. Ross (to E. I. du Pont de Nemours & Co.). USP 2 440 976, May 4, 1948.

A bracket for supporting the yarn-guiding funnel used in the centrifugal spinning of rayon allows the funnel to be retracted and locked into a raised position.
VBS TTD: 9-48

Spinning rayon. Spinning pump with a swingable discharging tube for machines producing artificial fibers. Hamel. Carl Hamel A. G. Ger. P. 727 172, Oct. 28, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 648 (May 16, 1947). TTD: 9-48

Spinning viscous solution. Apparatus for spinning highly viscous masses to make sheets. Schade & Weber. Kalle & Co. A. G. Ger. P. 713 403, Nov. 6, 1941. 3 pp. *Bibl. Sci. Ind. Reports 5,* 545 (May 9, 1947). TTD: 9-48

Unravelling rayon. Device for separating an endless bundle of artificial fibers into staple lengths. Vereinigte Glanzstoff-Fabriken A. G. Ger. P. 711 149, Sept. 26, 1941. 5 pp. *Bibl. Sci. Ind. Reports 5,* 651 (May 16, 1947).

Drawing included. TTD: 9-48

Yarn traverse. Winding mechanism. Wm. J. Elvin & Elmer R. Stahl (to Celanese Corp. of Am.). USP 2 443 231, June 15, 1948.

A yarn take-up device comprising a take-up bucket or Topham box has a traversing motion with a variable stroke which may be lengthened or shortened. The mechanism permits higher winding speeds. The box may be swung from its working position to allow easy removal of the full package.
JAW TTD: 9-48

Synthetic fibers I 4

Cutting ribbon. Procedure and device for cutting endless thread ribbons. Wörn. I. G. Farbenindustrie A. G. Ger. P. 715 799, Jan. 7, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 649 (May 16, 1947).

Drawing included. TTD: 9-48

Density determinations. Density of undrawn, drawn and annealed nylon filaments. C. E. Black, III & Malcolm Dole. *J. Polymer Sci. 3,* No. 3, 358-64 (June, 1948).

The densities of drawn and undrawn nylon filaments (6-6 nylon) were found to be 1.1339 and 1.1384 respectively, at 25° C. Annealing either the drawn or undrawn forms to the highest temperature possible short of melting increased the room temperature density to 1.1564. The temperature coefficient measured at room temperature was greater for the drawn form of the nylon than for the undrawn form after annealing. The 3 methods of density measurement used, all involving immersion in organic solvents, are described in detail.
TTD: 9-48

Fiber treatment. Treatment of synthetic plastic fibers. Herbert E. Rose (to All American Aviation, Inc.). USP 2 441 209, May 11, 1948.

A compound produced from 80% shellac, 10% glycerin, and 10% of a solution containing 33% pitch dissolved in 67% methanol, may be used as a conditioning agent on an unspun synthetic plastic fiber. The purpose of such conditioning is to preserve the ability of the fiber to draw and to absorb energy while drawing.
GNR TTD: 9-48

Linear polymers. The physical chemistry of polymers. Part II. Raymond M. Fuoss. *Am. Scientist 36,* No. 2, 258-79, 320, 322, 324 (Apr. 1948).

This survey of linear polymers takes up their behavior in solution, the viscosity and thermodynamic properties of solutions of polymers, and determination of their molecular weights by turbidity measurements. It is concluded that polymer molecules act like chains of atoms whose behavior is determined primarily by the fact that the chains are long and secondarily by the interaction of force fields between substituents on those atoms. Cellulose derivatives, polyvinyl chloride, polystyrene, and rubber are among the materials studied. 125 references.
TTD: 9-48

Metallizing fibers. Improvement in the metallization of tissues and non-conductor fibrous materials. Callender-Suchy Developments Ltd., et Suchy C. T. French P. 918 337, Feb. 5, 1947. *Chimie et Industrie 59,* No. 6, 587 (June, 1948).

The fibers are cleaned completely, treated with an aqueous solution of zinc chloride, and then washed. The internal structure of the material is rendered conductive by immersion in a solution containing a silver compound and a reducing agent, after which the material is dried and the adhering metallic particles are removed. The metal is then deposited on the material by electrolysis until the desired thickness of metal is obtained.
TTD: 9-48

Nylon. Nylon—some of its properties and applications. Gordon Hazlewood, E. I. du Pont de Nemours & Co. *Am. Dyestuff Reptr. 37,* No. 9, 295-99 (May 3, 1948).

An address reviews the uses, a number of physical properties, chemical resistance, toxological properties, abrasion resistance, inflammability, resistance to insects, mildew and fungus, light resistance, and a number of applications of nylon yarns.
WPU, jr. TTD: 9-48

Nylon. Spherulite formation in polyhexamethylene adipamide. C. M. Langkammerer & W. E. Catlin. *J. Polymer Sci. 3,* No. 3, 305-13 (June, 1948).

The occurrence of spherulities in polyhexamthylene adipamide and the causes of their formation in various physical modifications of the polymer are described. Spherulites usually reduce tensile strength, increase opacity, and decrease workability. They have been observed in other polymers, but to a lesser degree, and in certain cellulose derivatives. TTD: 9-48

Nylon-rubber fabric. Super sheeting. Anon. *Du Pont Mag. 42,* No. 4, 9 (July-Aug. 1948).

Sheeting formed from a combination of nylon and neoprene is so strong that is is practically indestructible. It is oil- and stain-resistant. It can be sterilized with boiling water and with certain chemicals, and it resists cracking, peeling, sticking, and abrasion. TTD: 9-48

Patterns from films. Method for making patterns from polyvinylchloride film for the clothing industry. Böckl. I. G. Farbenindustrie A. G. Ger. P. 728 761, Dec. 3, 1942. 2 pp. *Bibl. Sci. Ind. Reports 5,* 561 (May 9, 1947). TTD: 9-48

Polyamides. Influence of the interaction of hydrogen on the properties of polyamides. G. Champetier & R. Aelion. *Bull. Soc. chim. 15,* Nos. 5-6, 683-8 (May-June, 1948).

The hydrogen interaction between the macromolecular chains of polyamides, caused by polycondensation of ω-amino acid or diacids and diamides, was found to affect directly the crystallinity, solubility, mechanical resistance, fusibility and stretch of the polyamides. Linear polyamides may be characterized by calculating the hydrogen interaction index directly from the point of fusion, which is a linear function of the hydrogen interaction index. The influence of N-alkylation of polyamides and alkylation of the carbon atom adjacent the NH group were studied. Nylon and polyundecanamide were among the polyamides studied. TTD: 9-48

Polyamides. Process for preparing solutions from superpolyamides. Herrmann & Schneider. Kalle & Co., A. G. Ger. P. 718 530, Mar. 13, 1942. 2 pp. *Bibl. Sci. Ind. Reports 5,* 623 (May 16, 1947). TTD: 9-48

Styroflex. Physics of styroflex: Technically important properties of polystyrene in stretched condition. F. Horst Müller. Supplement FIAT Final Report 870, PB 449 65. FIAT Misc. Chemicals 339, Jan. 1940. 25 pp. Price: $1.00 (Microfilm); $2.00 (Photostat). PB A 632 85. *Bibl. Sci. Ind. Reports 5,* 471 (May 9, 1947); *in German.*

For FIAT Final Report see v. 4, p. 754, this Bibliography. Brittle polystyrene, upon being stretched at elevated temperatures is transformed into the highly flexible styroflex. The stretching modifies only the mechanical properties, not the chemical or electrical properties. It is shown that the change may be fully explained by molecular physics. The thread-like molecules of polystyrene are somewhat unraveled and oriented mainly along an axis. This, and the effect of different degrees of stretching are explained by drawings. Further analysis was undertaken by means of

x-rays and by double refraction. This document is reprinted from the scientific publication of the Siemens Works, vol. 19, no. 1. TTD: 9-48

Styroflex. Styroflex and its importance in cable construction. E. Fischer & F. H. Müller. Communication from the cable factory of the Siemens-Schuckert-Werke A. G. and the central laboratory of the Wernerwerke of the Siemens und Halske A. G. (Reprinted from EFD, volume 4g); in German and in English, Mar. 1938, 32 pp. Available from Hobart Publishing Co., Box 4127, Washington 15, D. C.; $3.00. *Bibl. Sci. Ind. Reports 5,* 471 (May 9, 1947).

Styroflex is pliable and can be manufactured easily in the form of fibers and bands which do not deteriorate with age at ordinary temperatures. It has a small dielectric constant, is waterproof and the electrical losses are slight. A number of illustrations in the German text show the material being tested and used. Graphs and tables list its properties. TTD: 9-48

Vinyon N. Processing, properties, and outlets of new "Vinyon" N yarns revealed. Anon. *Textile Age 12,* No. 3, 44-48, 50-51 (Mar. 1948).

Some details of the spinning, knitting, weaving, dyeing, and finishing of Vinyon N yarns are noted. A discussion of the physical and chemical properties and uses of the yarn is also given. TTD: 9-48

Fiber applications I 5

Cotton web fabrics. New uses for cotton through web process. Maurice A. Goldman, Fibre Products Laboratories, Inc. *Fibre & Fabrics 100,* No. 3271, 6-8 (Oct. 11, 1947).

Processes for the low-cost production of cotton web fabrics are described in detail. Unspinnable coarse cotton is suitable for the production of card-web fabric and these fabrics may be used to produce products which will complete favorably on the market with similar products now being fabricated from metals, paper, etc. TTD: 9-48

Felting. Method of felting. Hugo Boeddinghaus (to Am. Felt Co.). USP 2 441 390, May 11, 1948.

Fine fluffy fibers such as furs, Aralac, cotton, or mixtures of these fibers are felted in a process in which fiber webs are mechanically distributed onto an endless moving burlap apron which travels continuously through a felting station where steam, moisture, and pressure are applied. The fibers are fed onto the apron by a substantially modified woolen card, or in the form of continuous non-felted batt. The first layer of fibers adheres to the burlap apron and an additional layer of fibers is added to

the felt each time the apron makes its circuit. The felt forms a blanket the same length as the apron and its thickness depends on the number of laminations layed on the burlap apron. Upon completion, the felt body is severed transversely and separated from the apron.
MJC TTD: 9-48

Fiber use. Filler for acetylene cylinders consisting of vegetable fiber materials. Gilbert Aue. Ger. P. 726 925, Oct. 23, 1942. 2 pp. *Bibl. Sci. Ind. Reports 5,* 619 (May 16, 1947). TTD: 9-48

Floor covering. Punched felt floor covering and process of making the same. Henry A. Reinhardt (to Bigelow-Sanford Carpet Co., Inc.). US P2 429 486, Oct. 21, 1947.

A floor covering consists of a burlap base on which has been placed a thin layer of a vulcanizable sponge rubber compound. The top surface of the covering consists of a mat of unwoven fibers, parts of which are punched through the burlap. When the sponge rubber compound is heat treated, it swells and fills the spaces between the fibers on the lower side of the mat, binding the mass securely together.
SPH TTD: 9-48

Insulating material. Apparatus for making tubular fibrous products. Howard W. Collins (to Owens-Corning Fiberglas Corp.). USP 2 428 653, Oct. 7, 1947.

A tubular insulating member of fibrous material like glass wool is produced for use as a pipe covering. A method of packing the fibers radially on a mandril and of applying heat to soften the fibers is described.
SPH TTD: 9-48

Non-woven fabric. Insulating fabric. Games Slayter (to Owens-Corning Fiberglas Corp.). USP 2 428 591, Oct. 7, 1947.

This invention relates to a non-woven fabric having sound-absorbing properties on one face and decorative pile or other effect on the opposite face. The center layer of the fabric is composed of a moisture-resistant material such as rubber, resin, or the like. The fabric is to be used as the lining for vehicles such as automobiles, air craft, etc.
SPH TTD: 9-48

INORGANIC FIBERS II

Glass fibers. Research on the elasticity of glass fibers. W. Bobeth. *Melliand Textilber. 28,* No. 12, 409-13 (Dec. 1947); *Chimie et Industrie 59,* No. 6, 587 (June, 1948).

The elastic properties of glass fibers are best studied by

measurements of resistance to rupture. The method of preparation of glass fibers has a considerable effect on their properties. The greatest resistance is obtained when the fibers are prepared by being drawn through a blast pipe; these fibers can support a 4% stretch.
TTD: 9-48

Mineral fibers. Method and apparatus for fiberizing molten material. Edw. R. Powell (to Johns-Manville Corp.). USP 2 428 810, Oct. 14, 1947.

Molten material such as melted rock, slag, glass, or mixtures of these is allowed to run onto the surface of a rapidly revolving cyclinder. Near the first cylinder is a second cylinder whose axis is not parallel to the first. The molten material leaves the first cylinder and strikes the second. After passing through the bite of the 2 cylinders, the material is drawn into fibers, like mineral wool.
SPH TTD: 9-48

Mineral wool. Device for the manufacture of slag wool and mineral wool by means of a stream of compressed air. Fritz Muthmann. Ger. P. 722 886, July 23, 1942. 3 pp. *Bibl. Sci. Ind. Reports 5,* 632 (May 16, 1947).

Drawings are included. TTD: 9-48

Spinning asbestos. Method for the preparatory spinning of short-fibered asbestos together with a fiber base such as cotton. Johannes Küchenmeister. Ger. P. 726 468, Oct. 14, 1942. 2 pp. *Bibl. Sci. Ind. Reports 5,* 649 (May 16, 1947). TTD: 9-48

FIBER TO YARN III

Yarn tension. Tension compensator. Anon. *Textile Industries 112,* No. 1, 149 (Jan. 1948).

A tension compensator for automatically producing a constant output tension has been announced by Walter Kidde & Co., Inc., Belleville, N. J. The unit is self contained and is easily installed. The device utilizes a ball bearing compensating disc tension which utilizes the yarn tension to control disc pressure. Tension from 15 to 120 grams may be applied by means of a calibrated dial and will remain constant regardless of type of yarn, yarn friction, yarn speed, or normal changes in plant atmospheric conditions. TTD: 9-48

Fiber preparation III 1

Automatic feeder. Device for controlling the degree to which hopper-feeders or the like are filled. Dummel. Siemens-Schuckertwerke A. G. Ger. P. 729 040, Dec. 9, 1942. 3 pp. *Bibl. Sci. Ind. Reports 5,* 651 (May 16, 1947).

Drawing included. TTD: 9-48

Bobbin stripper. Spool stripper. Harold A. Giffin, Lowell & Henry York. USP 2 443 002, June 8, 1948.

Roving, which may be left on a bobbin or jack spool, is removed by means of several wire-covered brushes. A brush removes the waste from the spool or bobbin and is then stripped by a second brush which in turn is cleaned by a reciprocating comb. A suction fan deposits waste in a suitable container underneath the machine.

JAW TTD: 9-48

Comber. Combing machine for textile fibers. John W. Nasmith. USP 2 428 633, Oct. 7, 1947.

A simple mounting is supplied for the top comb of a standard comber. An alteration in the path through which the comb moves provides better operation. The adjustments for setting the comb are improved and made convenient.

SPH TTD: 9-48

Electrostatic web production. Textile product. Aaron Schwartz (to Celanese Corp. of Am.). USP 2 442 880, June 8, 1948.

Artificial staple fibers, taken from a hopper, are oriented and parallelized in a vertical plane on a moving electrostatically-charged belt without combing, carding, or like processing. A second system of belts continuously removes the fibers and flattens them into a web suitable for the formation of rovings. Two mechanical arrangements are described.

ECH TTD: 9-48

Fiber treatment. Treatment of textile fibers. Donald H. Powers & Wm. J. Harrison (to Monsanto Chemical Co.). USP 2 443 512, June 15, 1948.

Unspun textile fibers are treated to increase their slip resistance and to prepare them for spinning by applying to the fibers a colloidal aqueous solution consisting of silica sol free of silica gel, and allowing the fibers thus treated to dry before the silica solution is allowed to gel. This silica treatment markedly reduces the slippage normally present in fibers, and thus increases the tensile strength of the resultant yarn.

WPU, jr. TTD: 9-48

Figuring lay. How to figure lay per inch on roving bobbins. Fay H. Martin. *Textile Industries 112,* No. 1, 77-80 (Jan. 1948).

Previous methods used in figuring layers per inch on roving bobbins are presented, and "Martin's Formula" for figuring the layers per inch directly are given. Tables and a chart are included. TTD: 9-48

Lap spindle. New lap spindle reduces work load. Anon. *Platt's Bull. 6,* No. 2, 32-33 (Mar.-Apr., 1948).

A new type light lap spindle which can be applied to all makes of sliver and ribbon lap machines without alteration to the machines themselves, is made from high grade steel tubing. In the course of a 45 hr. week the total weight handled by the operator may be reduced by about 7,500 lbs. by the use of the light-weight spindle.

TTD: 9-48

Opening. Unorthodox blowing [opening] rooms. Anon. *Platt's Bull. 6,* No. 2, 20-23 (Mar.-Apr., 1948).

The application of electro-pneumatic distribution equipment for unusual opening rooms is described. Diagrams of the electrical circuit and machine layouts are given.

TTD: 9-48

Processing fibrous materials. Process for drying, cooling and remoistening fibrous materials. Hermann Haas. Ger. P. 724 062, Aug. 17, 1942. 3 pp. *Bibl. Sci. Ind. Reports 5,* 561 (May 9, 1947).

TTD: 9-48

Ring spinning. Fiber-trapping device for carded yarn ring spinning machines. Ernst Gessner A. G. Ger. P. 715 011, Dec. 12, 1941. 4 pp. *Bibl. Sci. Ind. Reports 5,* 561 (May 9, 1947).

Drawings included. TTD: 9-48

Sliver cans. How to arrange sliver in cans. Anon. *Textile Industries 112,* No. 1, 133 (Jan. 1948).

Two methods of putting more sliver in cans are briefly described. (1) by turning the coiler tube and can of the drawing frame in the same direction 15% more sliver may be put in a can. A further advantage to this method is that the sliver is smoother and pulls out better at the slubber; (2) by running the cans for a longer period at a slower speed more sliver can be put into cans. Cans run 1 hour and 15 minutes instead of 1 hour will weigh 20 to 25% more than those run for 1 hour at a faster speed. If the can revolves too fast the sliver will not be laid as compactly as it will at slower speeds.

TTD: 9-48

Sliver from rayon filaments. Apparatus and method for making artificial yarn and sliver. Philip H. Slaughter. USP 2 443 200, June 15, 1948.

A special sliver composed of a group of filaments is produced with spaced weak points along the component filaments. The week points are spaced with relation to each other on component filaments so that the sliver is adapted for drafting, in which process the filaments break at the weak points. Subsequent processing of the

sliver produces a staple fiber yarn instead of a continuous filament yarn. TTD: 9-48

Sliver transfer mechanism. Carding machine. Frederick W. Watson (to Toronto Carpet Mfg. Co., Ltd.). USP 2 442 478, June 1, 1948.

Breakage or separation of sliver as it passes from breaker to finisher card when carding wool, or other fibers, is prevented. An alarm is provided which notifies the operator and stops the machine automatically when the sliver breaks.
JAW TTD: 9-48

Suction card stripping. Carding machine. Chas. E. White & Ernest Clark (to Abington Textile Machinery Works). USP 2 428 255, Sept. 30, 1947.

The control mechanism of a suction stripper for a carding machine has been simplified to permit more effective utilization of automatic stripping apparatus which is operated in accordance with the general principles of USP 2 281 268 to Clark and USP 2 281 344 to White.
SPH TTD: 9-48

Tow to top. Manufacture of staple fiber yarns and tows. Joseph A. Truitt (to Am. Viscose Corp.). USP 2 432 355, Dec. 9, 1947.

In the conversion of continuous filament bundles into staple fiber bundles without the loss of continuity of the bundle, the continuous filament is subjected, as it proceeds between the pairs of drafting rolls, to a false twist in the bundle as it enters the system, thereby preventing complete severance of the bundle but assuring staggered breaks at fairly definitely controlled distances.
JHB TTD: 9-48

Tow to top. Method and apparatus for converting continuous filaments into spinnable slivers. William H. Furness (to American Viscose Corp.). USP 2 427 955, Sept. 23, 1947.

The object of the machine is to sever continuous filaments into short individual fibers without losing the continuity of flow of the stock in process. The first operation of the machine is accomplished by feed rolls and a cutter cylinder which cuts the filament bundle in a series of diagonal lines but does not entirely rupture the bundle of filaments. The cutting operation is followed by a twisting head in which drawing rolls are incorporated to break the remainder of the filaments.
SPH TTD: 9-48

Traverse mechanism. Artificial fiber spinning machine. Richard W. Stanley (to American Viscose Corp.). USP 2 427 373, Sept. 16, 1947.

This invention describes a novel traverse mechanism for spinning machines of the type that spin artificial fibers

which are collected within centrifugal buckets. The traversing heads are connected through bell cranks to a common connecting rod in such a way that while half of them are going up the other half are going down. The system may be either driven by cams or a hydraulic cylinder.
SPH TTD: 9-48

Winding from tape condensers. Apparatus for winding textile strands. Geo. J. Prosser & Cecil L. Watts (to Platt Bros. & Co.). USP 2 443 869, June 22, 1948.

A mechanism is described for mounting, traversing, and driving the surface winding drums and bobbins of textile condensers, such as leather tape condensers. TTD: 9-48

Spinning III 3

Bobbin creel. Creel structure for spinning and roving frames. Louis M. Cotchett (to Saco-Lowell Shops). USP 2 441 110, May 4, 1948.

A creel for spinning and roving frames is described in which the roving bobbins are supported in an upright position by arms which extend from a center frame so that only the bottom ends of the bobbins are engaged. The center frame consists of 2 metal shields inclined in opposite directions toward the sides of the frame.
JED TTD: 9-48

Bobbins. Handling bobbins. Anon. *Textile Industries 112,* No. 1, 135-7 (Jan. 1948).

The advantages of having frame doffers or slubber tenders to stack roving instead of throwing it into a box are briefly noted. A box for roving bobbins, so constructed that the upper half of one side may be lowered is described and illustrated. TTD: 9-48

Coarse yarn catcher. Coarse yarn catcher. Wolcott H. Bussiere. USP 2 428 064, Sept. 30, 1947.

This invention relates to a spinning frame, and particularly to a device in the form of a hook mounted behind the bobbins so that it stays a constant distance radially away from the point where the yarn is being wound. This distance is slightly greater than the radius of a normal balloon. When heavy yarn comes through the machine, the size of the balloon is increased so that the yarn catches on the hook and breaks. This prevents heavy yarn being wound onto the bobbins.
SPH TTD: 9-48

Feeding device. Device for automatically terminating the feeding of material in spinning, twisting and similar textile machines. Emil Stutz-Benz. Ger. P. 716 934, May 9, 1942. 5 pp. *Bibl. Sci. Ind. Reports 5,* 563 (May 9, 1947).

Drawing included. TTD: 9-48

Flyer twisting. Flyer twisting machine. Ingham S. Roberts (to Am. Viscose Corp.). USP 2 429 330, Oct. 21, 1947.

This patent relates to improvements on a flyer-type twisting machine to facilitate lacing up or threading. The yarn package is built with a tail so that the inner end of the yarn on the package is available.

SPH TTD: 9-48

Length measurement. Length measuring apparatus in combination with a twisting machine. Elmer J. Larsen & Oscar G. Nelson (to Western Electric Co.). USP 2 437 101, Mar. 2, 1948.

An apparatus is designed for measuring length of cable as it is formed on a twisting machine.

JHB TTD: 9-48

Mule spinning. Mule spinning device. Robt. A. Gard. USP 2 442 724 & USP 2 442 725, June 1, 1948.

More yarn is wound on mule spindles with increased tension without causing yarn breakage by means of a lever and spring mechanism which is attached to the tension faller wire supporting shaft. TTD: 9-48

Pneumafil waste removal. Pneumatic collection and air conditioning for textile spinning frames. Hans C. Bechtler (to Pneumafil Corp.). USP 2 431 726, Dec. 2, 1947.

Broken ends and loose particles liberated from the strands during their travel through a spinning frame are collected and removed. Simultaneously, conditioned air is uniformly distributed in the immediate vicinity of each individual strand.

JHB TTD: 9-48

Ring wear. Wear in spinning rings. *Platt's Bull. 6,* No. 2, 35-37 (Mar.-Apr., 1948).

A brief discussion is given of the metallurgist's problems and reactions concerning wear of spinning rings. TTD: 9-48

Roving catcher. Roving catcher. Wolcott H. Bussiere. USP 2 442 162, May 25, 1948.

Coarse or heavy yarn strikes a control lever which in turn breaks the roving in the creel in order to reduce waste and bad qualities of roving or yarn and to prevent the making of heavy roving or yarn.

JAW TTD: 9-48

Speed of threads. Procedure and device for measuring the running speed of individual threads, particularly of freshly spun synthetic-silk threads. Maxton. Vereinigte Glanzstoff-Fabriken A. G. Ger. P. 710 196, Sept. 6, 1941. 5 pp. *Bibl. Sci. Ind. Reports 5,* 651 (May 16, 1947).

Drawing included. TTD: 9-48

Spindle drive. Ring-spinning machine, or ring-yarn machine with spindles driven upward and downward by a drum. Günther Preisser. Ger. P. 709 310, Aug. 13, 1941. 4 pp. *Bibl. Sci. Ind. Reports 5,* 562 (May 9, 1947).

Drawings included. TTD: 9-48

Spinning frame conversion. Conversion ring frames. Anon. *Platt's Bull. 6,* No. 3, 40-48 (May-June, 1948).

Ring spinning frames may be normally converted to have: high drafting, tape drive to spindles, roller bearing spindles, ball bearing jockey pulleys, rising and falling lappets, large packages, which are strictly within the limitations imposed by the existing frame, and individual electric motor drive. The advantages to be derived from such modifications and the considerations inherent therein are discussed. TTD: 9-48

Spinning rayon. Device for carrying out the method for simultaneous spinning and yarning of artificial fibers by means of a rotating nozzle in a precipitating bath. Karl Berndt. Ger. P. 707 772, July 3, 1941. 3 pp. *Bibl. Sci. Ind. Reports 5,* 647 (May 16, 1947). TTD: 9-48

Spinning rayon. Rotary spinning device for the simultaneous spinning and yarning of artificial fibers. Karl Berndt. Ger. P. 709 333, Aug. 13, 1941. 3 pp. *Bibl. Sci. Ind. Reports 5,* 647 (May 16, 1947).

Drawing included. Supplement to patent 707 771. TTD: 9-48

Spinning yarn. Spinning and yarn machine with cams and electric braking of the trailing spinning parts. Max Nickel. Ger. P. 724 018, Aug. 15, 1942. 3 pp. *Bibl. Sci. Ind. Reports 5,* 562 (May 9, 1947).

Drawing included. Supplement to patent 687 930. TTD: 9-48

Spinning yarn. Thread tension measuring device for spinning yarn and similar machines with moving thread guides. Stebler & Körber. Siemens-Schuckertwerke A. G. Ger. P. 715 744, Jan. 6, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 563 (May 9, 1947).

Drawing included. TTD: 9-48

Spinning wool. Raising the count limit of wool. R. S. Audley. *Fibres 8,* No. 11, 372-73 (Nov. 1947).

The question of fineness, the use of wool with rayon

staple, and the maintaining of regularity are discussed with respect to raising the count limit of wool.
TTD: 9-48

Thread guide. Method of improving the guiding of threads in the manufacture of yarn on 2-wire yarn spindles. Lenk. Barmer Maschinenfabrik A. G. Ger. P. 707 406, June 21, 1941. 3 pp. *Bibl. Sci. Ind. Reports 5,* 560 (May 9, 1947).

Drawing included. TTD: 9-48

Worsted yarns. Towards roving levelness; worsted open drawing. R. S. Audley. *Fibres 8,* No. 12, 412-14 (Dec., 1947).

Suggestions for obtaining roving levelness are given. Careful attention to doublings, balancing operations, and the drawing process will materially aid in the production of level rovings. TTD: 9-48

Yardage on bobbins. Multiple bobbin gauge. James A. King. USP 2 427 913, Sept. 23, 1947.

A stand is arranged with a number of small scales so that when a tray of bobbins is lowered into place on the stand each individual bobbin is weighed separately. A series of signal lights indicate whether or not each of the bobbins contains the required quantity of thread.
SPH TTD: 9-48

Winding III 4

Bobbin stand. Bobbin stand increases winding efficiency. Anon. *Textile Industries 112,* No. 1, 131, 133 (Jan. 1948).

An improved bobbin stand for jumbo cone winders is described and illustrated. The device consists of a support and revolving arm on which are mounted 2 bobbins with the tailing of one tied to the end of the other. This arrangement permits operators to make replacements more easily, with a substantial increase in production.
TTD: 9-48

Bobbins and spools. Simple device retrieves bobbins and spools. Anon. *Textile Industries 112,* No. 1, 139 (Jan. 1948).

An inverted "V" device, made of wood or tin, may be placed under spoolers to cause spools and bobbins that have fallen under the frame to roll out. In modified form the device is applicable to other textile machines.
TTD: 9-48

Layer windings. Winding machines for the production of spools of constant, or decreasing, or increasing length of layer windings. Treckmann. Halstenbach & Co. Ger. P. 723 319, Aug. 3, 1942.

5 pp. *Bibl. Sci. Ind. Reports 5,* 561 (May 9, 1947).

Drawings included. TTD: 9-48

Piecing up. Winding machine. Lester Campbell, (to Foster Machine Co.), USP 2 432 722, Dec. 16, 1947.

An aspirator withdraws by suction a length of yarn from the package being wound when a free end exists and places this sucked-off length in position to be assembled or knotted with the yarn from the supply source.
JHB TTD: 9-48

Pirn winder. British automatic pirn winder. Anon. *Fibres, Fabrics & Cordage 14,* No. 10, 445 (Oct. 1947).

Weston Engineers, Ltd. has developed a pirn winder in which all operations are automatic except for refilling of the pirn battery and replenishment of the supply package. Spindle speeds from 3,000 rpm to 6,000 rpm may be obtained. TTD: 9-48

Spooling. Device for producing spools of large dimensions out of delicate thread materials. Bochmann. Barmer Maschinenfabrik A. G. Ger. P. 723 263, Aug. 1, 1942. 3 pp. *Bibl. Sci. Ind. Reports 5,* 560 (May 9, 1947).

Drawing included TTD: 9-48

Swinging thread guide. Device for the production of rayon rolls by using a swinging thread guide. Steinmetz. Carl Hamel A. G. Ger. P. 714 104, Nov. 21, 1941. 3 pp. *Bibl. Sci. Ind. Reports 5,* 561 (May 9, 1947).

Drawing included. TTD: 9-48

Tensiometer. Tensiometer for yarn coning machines. Herbert Naumann (to North American Rayon Corp.). USP 2 428 379, Oct. 7, 1947.

The tension in running yarn is measured by a device which indicates the force required to deflect the yarn a given amount from its normal path. The device is particularly useful in measuring the tension when rayon is wound onto cones in a conventional machine so that cones of uniform hardness are produced.
SPH TTD: 9-48

Thread guides. Device for driving and changing the stroke of thread-guides on cop spool machines. Schweiter Machinenfabrik A. G. Ger. P. 708 966, Aug. 1, 1941. *Bibl. Sci. Ind. Reports 5,* 651 (May 16, 1947).

Drawings included. TTD: 9-48

Traverse motion. Device for the prevention of uneven distribution of yarn on cross-wound bobbins of yarn and winding machines. Steckborn Kunstseide A. G. Ger. P. 711 801, Oct. 9, 1941. 7 pp. *Bibl. Sci. Ind. Reports 5,* 563 (May 9, 1947).

Drawings included. TTD: 9-48

Uniform yarn package. Spool ejecting and sizing mechanism for winding machines. Ernest K. Whitener, Thos. G. Gilreath, Lester A. Saunders & John S. Elmore. USP 2 442 157, May 25, 1948.

A yarn package is automatically stopped when it has acquired a pre-determined yardage by mechanism which raises the package out of contact with the driving drum.
JAW TTD: 9-48

Winding. Cop yarn winding machine with a thread guide gradually receding in accordance with the form of the cop. Rosenkranz & Treckmann. Halstenbach & Co. Ger. P. 716 830, Jan. 30, 1942. 5 pp. *Bibl. Sci. Ind. Reports 5,* 561 (May 9, 1947).

Drawings included. TTD: 9-48

Winding. Device for holding and vertically unwinding the yarn from bobbins or the like. Ernst Kowes. Ger. P. 711 756, Oct. 6, 1941. 3 pp. *Bibl. Sci. Ind. Reports 5,* 649 (May 16, 1947).

Drawing included. TTD: 9-48

Winding. Device for spindleless bobbin winders for laying the thread on the bobbin carriage. Treckmann. Halstenbach & Co. Ger. P. 711 274, Sept. 29, 1941. 6 pp. *Bibl. Sci. Ind. Reports 5,* 648 (May 16, 1947).

Drawing included. TTD: 9-48

Winding. Yarn winding machine. Edw. R. Davis & Howard W. Doughty, Jr. (to Foster Machine Co.). USP 2 436 557, Feb. 24, 1948.

In a high-speed winding machine, a selector switch influenced by changes in the yarn tension operates the relay in the motor circuit for controlling power to the motor in order to vary the spindle speed.
JHB TTD: 9-48

Yarn processing III 5

Beaming. Beaming apparatus. Thomas F. Suggs. (to Cocker Machine & Foundry Co.). USP 2 443 014, June 8, 1948.

Apparatus is provided to doff a full beam from a warper so as to reduce the manual labor required by present methods. The beam is accurately positioned at all

times with positive assurance that the parts are held in correct alignment.
JAW TTD: 9-48

Drying yarn packages. Method and apparatus for drying yarn packages in an electrostatic field. Alfred S. Brown (to Skenandoa Rayon Corp.). USP 2 428 615, Oct. 7, 1947.

Means are provided for drying packages of yarn in an electrostatic field and in an atmosphere of water vapor in order to improve the quality of the yarn. The apparatus includes an oven with a conveyor system to handle yarn in commercial quantities. Additional heat is supplied by steam to hollow electrodes.
SPH TTD: 9-48

Warping and beaming. Device for alternately driving the warp drum and the warp beam of a warping and beaming machine. Kurt Metzler. Ger. P. 727 549, Nov. 5, 1942. 6 pp. *Bibl. Sci. Ind. Reports 5,* 649 (May 16, 1947).

Drawing included. TTD: 9-48

Warping and beaming. Warping and beaming machine with a directly driven beam and an interposed measuring drum which is rotated by the threads. Wiggermann. Schlafhorst (W.) & Co. Ger. P. 728 718, Dec. 2, 1942. 5 pp. *Bibl. Sci. Ind. Reports 5,* 650 (May 16, 1947).

Drawing included. TTD: 9-48

Yarn-advancing mechanism. Thread-advancing apparatus. Wm. Sever (to Imperial Chemical Industries, Ltd.). USP 2 444 315, June 29, 1948.

In order to process artificial filaments or threads where appreciable time and limited space are factors, the present invention employs 2 components, one of which is a rotatable cage. The end plates are parallel but not colinear. The bars are flexibly attached to the end plates. The second component may be a rod, roller, or another cage. The rotating cage may be either generally conical or cylindrical in shape. Operation of the system carries the filament around the components several times, with controlled advancement from one end to the other.
LCL TTD: 9-48

Yarn-advancing reel. Method of handling threads. Richard W. Stanley (to Am. Viscose Corp.). USP 2 444 409, June 29, 1948.

In a reel of the thread-advancing type used to hold yarn during liquid treatments, the yarn passes through a path having the general form of a helix. The reel has 2 sets of bars, one set being mounted eccentrically to the other set. The eccentric mounting causes a portion

of the helix of yarn to bulge radially outward with respect to the true cylinder and when the eccentric shaft is rotated this bulged portion is continuously shifted around the axis.
CCJ TTD: 9-48

Yarn-advancing reel. Yarn-advancing reel. Alvin L. Ewing (to E. I. du Pont de Nemours & Co.). USP 2 428 703, Oct. 7, 1947.

A yarn advancing reel is designed so that a yarn supporting bar is moved radially by inflation and deflation of a rubber tube to which the bar is fastened. The axial movement is imparted to the yarn supporting bar by a cam mechanism.
SPH TTD: 9-48

Yarn-advancing reel. Yarn-advancing reel. Alvin L. Ewing (to E. I. du Pont de Nemours & Co.). USP 2 428 704, Oct. 7, 1947.

A yarn-advancing reel is designed so that the yarn supporting members are moved axially by contact with a helix and radially by fluid-actuated pistons. These 3 movements are timed so that yarn is wound onto the reel in the form of a helix.
SPH TTD: 9-48

Yarn-advancing reel. Yarn-advancing reel. Robt. W. Stone (to E. I. du Pont de Nemours & Co.). USP 2 429 534, Oct. 21, 1947.

A reel is composed of movable and fixed yarn-carrying bars. The movable bars have a radial movement and also an axial movement which is controlled by mechanical means. The cycle of movement is such that the yarn is advanced along the reel.
SPH TTD: 9-48

Yarn-advancing reel. Yarn-advancing reel. Robt. H. Stafford (to E. I. du Pont de Nemours & Co.). USP 2 432 046, Dec. 2, 1947.

Discs mounting yarn-carrying blades alternately disposed between a set of fixed yarn-carrying bars and revolving in a skewed perpendicular plane continuously advance the yarn helically along the reel.
JHB TTD: 9-48

Yarn guide. Adjustable yarn guide. Ernest K. Whitener (Cocker Machine and Foundry Company). USP 2 427 827, Sept. 23, 1947.

An adjustable yarn guide for warpers and slashers is provided by a "lazy tongs" mechanism in which pins are used to make equally spaced guide intervals. The angle of the members of the "lazy tongs" is changed by connecting adjacent pivots by means of a left and right thread arrangement. Each screw is driven by a gear

which is motivated from a common shaft so that all screws move simultaneously.
SPH TTD: 9-48

Yarn products III 6

Banded cord. Method and apparatus for producing banded cord lengths. Edgar T. Ward. USP2 429 537, Oct. 21, 1947.

This invention relates to an improved method of applying plastic to the ends of lengths of cord to prevent raveling. The apparatus places bands along a continuous length of cord at predetermined intervals and cuts the cords at the bands.
SPH TTD: 9-48

Elastic thread. Elastic thread. Sterling W. Alderfer. USP 2 442 279, May 25, 1948.

An elastic thread is composed of 2 or more laminated elements, one of which is natural or synthetic rubber and the other a flat ribbon of molecularly orientable material, such as polyvinyl alcohol. It is claimed that elastic threads of this type may be easily handled in ordinary textile equipment, such as knitting machines and looms.
VBS TTD: 9-48

Nylon cordage. Nylon ropes. Anon. *Fibres 8,* No. 10, 339-42 (Oct. 1947).

A memorandum issued by British Ropes, Ltd., gives the properties of nylon cordage and the reults of tests. This company expresses the opinion that the introduction of nylon is an outstanding event in the long history of cordage, and even more revolutionary changes may be expected. TTD: 9-48

Thread. Machine sewing thread. Sommaripa. I. G. Farbenindustrie A. G. Ger. P. 710 762, Sept. 20, 1941. 2 pp. *Bibl. Sci. Ind. Reports 5,* 649 (May 16, 1947). TTD: 9-48

Thread guides. Ornamental thread machine with ornamental thread guides which are movable upward and downward. Freyer. G. F. Grosser Firma. Ger. P. 727 314, Oct. 30, 1942. 6 pp. *Bibl. Sci. Ind. Reports 5,* 648 (May 16, 1947).

Drawings included. TTD: 9-48

Yarn preparation IV 1

Nylon sizing viscosimeter. Viscosity controller for nylon sizing solution. Anon. *Textile Industries 112,* No. 1, 149 (Jan. 1948).

A viscosimeter particularly adapted to the control of nylon sizing solutions used in dressing yarns has been

announced by Fischer & Porter Co., Hatboro, Pa. Instruments are available for viscosity ranges of 80 to 130 SSU, and control of size viscosity is possible to within less than 1 SSU. TTD: 9-48

Slashers. Slashers and slashing. II. R. A. Silcox. *Textile Age 12,* No. 3, 62-64, 68-70 (Mar. 1948).

Stretch control, size vats, squeeze rolls and their covering, and reversing rolls are discussed in relation to cotton slashers. TTD: 9-48

Slashers. Slashers and slashing. III-V. R. A. Silcox. *Textile Age 12,* No. 4, 66-70, No. 5, 72-75, No. 6, 75-76, 78-80 (Apr. June, 1948).

Information on slashers is given with reference to safety devices, means of removing condensate from cylinders, insulation of heads, control of stretch in warps, drying yarns, and the relation of the number of cylinders and drying rates. The first part of a discussion on the head end is also given. TTD: 9-48

Warp sizing. Warp sizing problems. Anon. *Textile Age 12,* No. 1, 39-40, 44-46 (Jan. 1948).

Research to improve warp sizing techniques and end products is discussed. TTD: 9-48

Weaving IV 2

Loom stoppage reports. Value of loom stoppage reports. John Middleton. *Textile Industries 112,* No. 1, 101-03 (Jan. 1948).

A system for studying loom stoppage and its causes is described and discussed. Loom stops are classified under the 4 main headings of (1) warp stops, (2) filling stops, (3) mechanical stops, and (4) unclassified stops. A work sheet and summary report are illustrated. TTD: 9-48

Pirn carrier. Pirn carrier with a built-in electric chain control for looms with a controlled pirn-carrier drive. Karl Mutter. Ger. P. 711 804, Oct. 7, 1941. 4 pp. *Bibl. Sci. Ind. Reports 5,* 649 (May 16, 1947).

Drawing included. TTD: 9-48

Superposed fabrics. Procedure for the simultaneous weaving of 2 or more superposed fabrics which are mutually connected only by occasional weft threads. Adolf Pensler. Ger. P. 708 450, July 21, 1941. 3 pp. *Bibl. Sci. Ind. Reports 5,* 650 (May 16, 1947).

Drawing included. TTD: 9-48

Warp beam brake. Weightless warp-beam brake adapted for rotating about the warp-beam-brake

disk. August Delius. Ger. P. 727 466, Nov. 4, 1942. 3 pp. *Bibl. Sci. Ind. Reports 5,* 648 (May 16, 1947).

Drawing included. TTD: 9-48

Warp guide. Guiding and conveying means for threads which, after having been previously separated are to be connected, such as warp yarns. Max Poege. Poege & Co., Apparate- und Maschinenbau A. G. Ger. P. 728 268, Nov. 24, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 650 (May 16, 1947).

Drawing included. TTD: 9-48

Weaving. Device on wide weaving looms for properly re-setting the bolt in alignment with the thread. Trittmann. Colsman (Peter Lucas) Firma. Ger. P. 715 903, Jan. 9, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 648 (May 16, 1947).

Drawing included. TTD: 9-48

Weaving. Four factors affecting weaving of spun rayon-wool blended fabrics. Stanley A. Prokuski. *Textile Industries 112,* No. 1, 81-2 (Jan. 1948).

Assuming a satisfactory yarn, weaving of spun rayon-wool blended fabrics is greatly affected by (1) too soft winding of warp beam; (2) overdrying of the warp yarn at the slasher; (3) loss of proper warp tension through storage or warps in improper humidity; and (4) use of damaged or faulty beams. Careful attention to these factors will greatly facilitate weaving. TTD: 9-48

Looms IV 2 a

Bobbin receiver. Flexible bobbin receiver for weft replenishing looms. Harold R. Wing (to Crompton & Knowles Loom Works). USP 2 432 845, Dec. 16, 1947.

The flexible bobbin receiver for a weft replenishing loom is provided with a sliding lock arrangement to permit easy emptying.
JHB TTD: 9-48

Bobbin receiver. Partitioned bobbin receiver for weft-replenishing looms. Richard G. Turner (to Crompton & Knowles Loom Works). USP 2 428 251, Sept. 30, 1947.

On a weft-replenishing loom, an empty bobbin receiver is provided which consists of a canvas bag with a partition in the center, the plane of which is at right angles to the lay. This partition causes the bobbins to fall in a fairly orderly fashion so that the bag will hold many

more bobbins than it will when the bobbins fall at random angles.
SPH TTD: 9-48

Check strap. Check strap for picker sticks. Robt. B. Etchier (1/10 to J. Chester Johnson). USP 2 429 348, Oct. 21, 1947.

A check strap having parallel edges is provided with grooves or depressions on one or both surfaces. The depressions extend only part way through the strap and cause the strap to be self cooling.
SPH TTD: 9-48

Circular knitting machine. Knitting machine. Oscar Fregeolle (to Hemphill Co.). USP 2 427 720, Sept. 23, 1947.

This invention relates to knitting machines of the circular, independent needle type and is concerned primarily with an improved sinker cam cap. Unlike the ordinary sinker cap, this one does not swing to position the sinker cams for knitting in each direction and so makes it possible to position the other sinker cams symmetrically.
SPH TTD: 9-48

Filling motion. Loom filling motion. Harold Hoeber (to Textile Research Co.). USP 2 427 725, Sept. 23, 1947.

The filling detecting mechanism and stop motion of a loom has for one of its members a heavy level actuated by a cam. At high loom speeds, this lever will leave the surface of the cam at the top of its travel, due to its inertia. This device provides a pressure means on the cam follower at only the portion of the stroke when the cam follower might leave the cam.
SPH TTD: 9-48

Harness mechanism. Link for loom harness mechanism. Carl P. Bergstrom & Robt. S. Schedin (to Crompton & Knowles Loom Works). USP 2 429 794, Oct. 28, 1947.

The link between the lever and the spring of the pull-down mechanism on the loom harness is provided with a removable hook member which is easily replaced when worn.
JHB TTD: 9-48

Letoff. Adjustable letoff for looms. Walter H. Wakefield (to Crompton & Knowles Loom Works). USP 2 441 680, May 18, 1948.

A letoff mechanism which can be used for either light or heavy warps, consists of a brake shoe, brake lever, and escapement lever. The brake is caused to dampen rapid vibration of the escapement mechanism when heavy fabrics are being woven.
JED TTD: 9-48

Loom beam. Loom beam. Clarence M. Asbill, Jr. (to Callaway Mills). USP 2 432 270, Dec. 9, 1947.

A sectionalized loom beam, utilizing pairs of spaced discs between which the yarn can be directed, permits the transfer of the warp from the top layer of a filled section to the bottom of an adjacent unfilled section without stopping the slasher or cutting the warp.
JHB TTD: 9-48

Loom lays. Hydraulic operating means for loom lays. Thos. Hindle. USP 2 428 313, Sept. 30, 1947.

The lay of a loom is operated by pistons working in hydraulic cylinders. The valves used to control the flow of oil to and from the cylinder are actuated by a cam which is motor driven in syncronism with the other parts of the loom. The cycle is such that the lay stands still at the rearmost position. This allows a larger shuttle to be used for a given size shed.
SPH TTD: 9-48

New looms. Research methods in weaving machinery. F. M. Fitzgerald. *Papers Am. Assoc. Textile Technologists 3,* No. 2, 92-7 (Mar. 1948).

The research objectives of the Draper Corporation are reviewed and discussed under the following headings: (1) improvements in the present type of loom; (2) reduction in the cost of warp and filling handling; (3) design of looms to weave without conventional shuttles and bobbins; (4) machinery for production of non-woven fabrics. TTD: 9-48

Picker. Picker. Geo. J. Muller (to Taylor Fibre Co.). USP 2 440 182, Apr. 20, 1948.

A loom picker is described which is designed to absorb some of the shock received by striking the shuttle. The picker is composed of 3 sections. The outer sections are formed of impregnated paper or fabric and a thermo-setting resin. Interposed between these sections is a block of rubber or other resilient material capable of resisting the striking force of the shuttle.
JED TTD: 9-48

Picker stick check. Attachment for looms. John L. Pratt (to Mary I. Pratt). USP 2 431 584, Nov. 25, 1947.

Flat side springs and a spring pressed end bumper replace the usual check strap for checking and holding the picker stick, thereby reducing the power required to operate the picking mechanism and thus prolonging the life of the picker and the shuttle binder.
JHB TTD: 9-48

Picking mechanism. Picking mechanism for looms. Curt Saurer (to The Ohio Rubber Co.). USP 2 427 625, Sept. 16, 1947.

A coupling between the sweep stick and the picker stick is designed to provide the necessary cushioning effect, but still eliminate wear on the picker stick at this point. The coupling consists of flexible rubber connectors and a rubber pad. These are arranged to provide flexability but eliminate back lash which causes wear on the picker stick.

SPH TTD: 9-48

Pile tuft cutter. Pile tuft cutter for axminster looms. Walter Y. Robb (to Crompton & Knowles Loom Works). USP 2 441 374, May 11, 1948.

A tuft cutting mechanism for an axminster loom provides a series of wedges or tapered shims between a cutting knife and its supporting bar, so constructed that they can be adjusted to change the contour of the knife. The cutting engagement between the front and back cutter knives is maintained throughout the length of the bars.

JED TTD: 9-48

Pneumatic thread holder. Pneumatic thread holder for looms. Richard G. Turner (to Crompton & Knowles Loom Works). USP 2 427 538, Sept. 16, 1947.

A chamber having a special shaped opening and subatmospheric pressure inside is used to collect and hold the weft ends of the reserve bobbins in weft-replenishing looms. The device is designed to reduce air leakage to a minimum and to keep the weft ends spread across the mouth of the chamber.

SPH TTD: 9-48

Pneumatic thread holder. Pneumatic thread holder for multi-stack magazines. Geo. N. Peterson (to Crompton & Knowles Loom Works). USP 2 440 523, Apr. 27, 1948.

A pneumatic thread holder is designed to hold the ends of yarn from filling bobbins in a 2-stack magazine on an automatic loom. A thread separator and thread guide are provided to prevent tangling of the yarn and to allow removal of the thread of a freshly transferred bobbin when cut at the selvedge.

JED TTD: 9-48

Temple roll. Tight-grip temple roll. Virgil B. Splawn. USP 2 428 101, Sept. 30, 1947.

A temple roll has a helical groove forming a helical thread. The thread has chordal slits in the sides. The material of the cylindrical roll cover is natural or synthetic rubber or other resilient material. The object of this design is to secure a tighter grip on the edges of the cloth without damage to the material.

SPH TTD: 9-48

Transferrer arm. Bodily movable transferrer arm. Richard G. Turner (to Crompton & Knowles Loom Works). USP 2 432 837, Dec. 16, 1947.

An improved bobbin transferrer arm of a weft replenishing loom moves bodily rearward during its downward arcuate stroke. The more nearly vertical path of the incoming bobbin is such as to permit the positioning of a larger bobbin without interference from the higher rear wall of the correspondingly larger shuttle.

JHB TTD: 9-48

Selvedge presser. Weaving loom having a continuous weft supply. Raymond Dewas. USP 2 441 802, May 18, 1948.

A "selvedge presser" device is described for looms having a continuous weft supply inserted without use of a filling bobbin. The device consists of a movable "presser" which is designed to bear on the selvedge ends of the top shed of the warp and a means to cause the depression of the selvedge ends. The degree of depression decreases gradually from the edge of the selvedge toward the cloth. The mechanism is designed to hold the filling in place while it is cut and to produce a well-finished selvedge.

JED TTD: 9-48

Swiss looms. The Saurer looms. A. Van Cauwenberghe. *Textielwezen 3,* 19-21 (Nov. 1947); *in French.*

The looms manufactured by the Sociètè Anonyme Adolph Saurrer at Arbon, Switzerland are described. Looms for weaving ribbons have been a specialty of this company for a number of years. TTD: 9-48

Control devices IV 2 b

Circular loom stop motion. Thread operated stop motion in circular looms. Victor M. J. Ancet (to Marius Fayolle, Alias Marcel Fayolle). USP 2 433 824, Jan. 6, 1948.

A broken thread permits a rocker, normally held in position by the tension of the thread, to effect a hindrance between periodically engaging fingers projecting from the periphery of a rotary drum, thereby actuating an electrical weft stop motion mechanism.

JHB TTD: 9-48

Electric weft detector. Electric weft detecting system for looms. Victor F. Sepavich & John C. Manoog (to Crompton & Knowles Loom Works). USP 2 431 650, Nov. 25, 1947.

An electronic weft detecting circuit is provided with a gas-filled tube and operated by direct current to insure instant energization of the detector relay or solenoid.

JHB TTD: 9-48

Electronic weft detector. Electronic weft detector for looms. Victor F. Sepavich & John C. Manoog (to Crompton & Knowles Loom Works). USP 2 429 528, USP 2 429 529 & USP 2 429 530, Oct. 21, 1947.

In a standard weft detector for fine yarn, either the feeler has to be set so near the end of the stroke that it is not in contact long enough to operate the mechanism or else it injures the yarn. This device has an electronic circuit in which a condenser is included in the plate circuit. The condenser is charged when contact is made and discharges through the coil of a relay, in this way increasing the time during which the circuit is closed.

SPH TTD: 9-48

Filling feeler. Filling feeler slide mechanism. John Rinne & Everett H. Ashton (to The M. W. Kellogg Co.). USP 2 443 401, June 15, 1948.

A cheap, simple mechanism with a positive action which lends itself to accurate control initiates a movement which will replenish an exhausted filling bobbin by automatically replacing it with a full bobbin.

JAW TTD: 9-48

Loom needle brake. Brake for axminster loom weft needles. Herbert A. Whitin (to Crompton & Knowles Loom Works). USP 2 429 006, Oct. 14, 1947.

The needle of an axminster loom is driven by a cable running over a series of sheaves. A brake is applied to the sheave nearest to the needle carriage. A brake is also applied to the motor shaft. These brakes are spring-actuated and are held in the off position by means of a solenoid in the motor circuit. The brakes are therefore applied the instant the power circuit is interrupted.

SPH TTD: 9-48

Loom needle motion. Needle motion. Albert R. Clairmont (to Mohawk Carpet Mills, Inc.). USP 2 429 394, Oct. 21, 1947.

This invention relates to the needle motion of looms in which needles are employed for inserting filling yarns into warp sheds to produce a fabric. A pattern wheel controls 2 or more contactors which in turn position the required end of weft thread so that it will be picked up by the needle. The device allows many colors of weft thread to be placed into the shed in any order, depending upon the arrangement of the pattern wheel.

SPH TTD: 9-48

Stop motion. Stop motion for axminster looms. Walter Y. Robb (to Crompton & Knowles Loom Works). USP 2 442 178, May 25, 1948.

In an axminster loom, a beam of light upon a photo-

electric cell will be intercepted by a falling tube frame and actuate an electrical means to stop the loom.

JAW TTD: 9-48

Stop motion. Stop motion for looms. Odie F. Doss. USP 2 444 285, June 29, 1948.

The weaving of faulty goods due to failure of filling changing mechanism to function properly is prevented by mechanism which automatically stops the loom if the filling breaks or if the clamp and cutter fails to hold the filling properly during a transfer. A mercury switch actuated by a shaft interrupts the flow of power when the shaft is rocked in one direction, and restores the power when the shaft is rocked in the opposite direction.

JAW TTD: 9-48

Fabric construction IV 2 c

Selvedges. Selvedge imperfections III. George Creasey, *Textile Age 12,* No. 3, 72, 74, 76-78 (Mar. 1948).

Catch cords are usually used on selvedgeless weaves to strengthen the edges, to take the strain off of overtensioned filling yarns, etc. Application of catch cords, including the type of yarn to use, catch cord weights, and the entering of catch cords on harness shafts, is discussed. Other suggestions for neat selvedges are also described. TTD: 9-48

Selvedges. Selvedge imperfections. IV-VI Geo. Creasey, *Textile Age 12,* No. 4, 48, 50, 52, No. 5, 54, 59-62, No. 6, 48, 52, 56, 58 (Apr.-June, 1948).

Attractive selvedges may be obtained by using special twists in filling yarns and properly sized yarns. Suggestions for eliminating selvedge defects include the use of temples, proper rollers, methods of re-using worn rolls, and methods of correcting and preventing damaged reeds. TTD: 9-48

Knitting machines IV 3 a

Draw mechanism. Draw mechanism of straight bar knitting machines. John E. Lynam & Patrick G. McCarthy (to William Cotton Ltd.). USP 2 428 465, Oct. 7, 1947.

This invention relates to an improved drive for carriers on straight bar knitting machines. The usual oscillating levers are replaced by a hydraulic drive for the reciprocating members.

SPH TTD: 9-48

Embroidery head. Circular knitting machine with wrap thread mechanism. Henry H. Holmes (to Wildt & Co., Ltd.). USP 2 442 441, June 1, 1948.

Circular knitting machines with an embroidery head,

having one or more operable thread guides each of which is adapted to wrap a wale thread from a bobbin round a needle, produce a stripe or a variety of other design effects by embroidery plating on face of a knitted fabric.

JAW TTD: 9-48

F. N. F. machine. Achieving scientific quality control on new F. N. F. tricot machine. Walter T. Boyer, Am. Viscose Corp. *Textile Age 12,* No. 5, 28, 32-34, 39-41, 44 (May, 1948).

The F. N. F. high speed tricot machine is designed to feed the warp yarns at a uniform, predetermined rate and to remove the cloth from the needles in the same manner. Instructions for predetermining warp runner lengths and the quality of fabric to be knitted on the F. N. F. machine are given. TTD: 9-48

Guide bar. Form-shaping yarn guide bar driving mechanism on flat frame knitting machines. Albin Richard Parthum. Ger. P. 716 590, Jan. 23, 1942. 5 pp. *Bibl. Sci. Ind. Reports 5,* 562 (May 9, 1947).

Drawing included. TTD: 9-48

Heels for stockings. Full-fashioned knitting machine. Sterling C. Mack (to Julius Kayser & Co.). USP 2 433 568, Dec. 30, 1947.

A method of widening fabrics on a full fashioned hosiery knitting machine can produce combination leg and foot hosiery blanks with widened portions, especially widened heel portions.

JHB TTD: 9-48

Heels for stockings. Knitting machine. Johannes P. Ludwig (to Phoenix Hosiery Co.). USP 2 430 882, Nov. 18, 1947.

A method of making integrally knitted stocking blanks of the kind characterized by having cheek gussets between the ankle and foot portions is accomplished by a supplemental heel knitting means which can be readily incorporated in existent straight knitting machines initially designed for the production of stocking leg blanks.

SPH TTD: 9-48

Heels for stockings. Method of manufacturing stockings with pocket heels on flat frame knitting machines and the machine to carry out this process. Verbeek. Karl Lieberknecht Firma. Ger. P. 709 586, Aug. 21, 1941. 6 pp. *Bibl. Sci. Ind. Reports 5,* 649 (May 16, 1947).

Drawing included. TTD: 9-48

Hosiery machine. Automatic hosiery machines. Anon. *Am. Wool Cotton Reptr. 62,* No. 28, 9-10, 51 (July 8, 1948).

The "H-H Model" automatic hosiery machine knits half-hose complete with ribbed tops. The most important feature of this machine is the cast-off and hook which work together in the dial in place of ordinary needles. Instructions on the operation and mechanism of the "H-H" machine are given. TTD: 9-48

Hydraulic mechanism. Knitting machine. Saml A. Monk. (to Mellor Bromley & Co., Ltd.). USP 2 442 822, June 8, 1948.

A hydraulic mechanism consisting of a hydraulic cylinder piston, pump, and valves is applied to a knitting machine, of the straight bar type, to actuate certain movable parts of the machine.

JAW TTD: 9-48

Knitted pile fabric. Method and flat frame knitting machine for manufacturing frame-knitted piled fabrics. Max Nebel. Ger. P. 685 296, Apr. 28, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 562 (May 9, 1947).

Drawing included. TTD: 9-48

Knitting. Rib knitting machine and method of knitting thereon. Frank Bonser (to Interlock Patents, Ltd.). USP 2 429 796, Oct. 28, 1947.

This invention relates to the production of a rib knitted fabric in which all or some of the loops are locked or tied. The machine includes means for controlling or segregating knitted loops and bights of yarn on the needles.

SPH TTD: 9-48

Knitting. Method of working-in an endless rubber ring in a welt by means of a tension device on flat frame knitting machines. Georg Vogel. Ger. P. 684 860, Oct. 22, 1941. *Bibl. Sci. Ind. Reports 5,* 651 (May 16, 1947).

Drawing included. TTD: 9-48

Knitting. Latch needle for circular knitting machines. Max Nebel. Ger. P. 687 381, July 16, 1942. 3 pp. *Bibl. Sci. Ind. Reports 5,* 650 (May 16, 1947).

Drawing included. TTD: 9-48

Knitting. Draw-off mechanism for flat frame knitting machines. Oswald. Seyfert & Donner. Ger. P. 701 333, Jan. 14, 1941. 4 pp. *Bibl. Sci. Ind. Reports 5,* 563 (May 9, 1947).

Drawing included. TTD: 9-48

Knitting. Knitting machine, especially flat-knitting machines, for hanging-over loops. Eberbach & Kohler. Reutlinger Strickmaschinenfabrik H.

Stoll & Co. Ger. P. 705 199, Apr. 19, 1941. 6 pp. *Bibl. Sci. Ind. Reports 5,* 562 (May 9, 1947).

Drawing included. TTD: 9-48

Knitting. Ribbed disk for circular knitting machines. Carl Leyh. Ger. P. 707 390, June 23, 1941. 3 pp. *Bibl. Sci. Ind. Reports 5,* 649 (May 16, 1947).

Drawing included. TTD: 9-48

Knitting. Knocking-over sinkers for flat frame knitting machines which are fastened by means of a clamping plate. Ehrhardt. David Richter A. G. Ger. P. 709 430, Aug. 16, 1941. 3 pp. *Bibl. Sci. Ind. Reports 5,* 562 (May 9, 1947).

Drawing included. TTD: 9-48

Knitting. Chain drive for the yarn guide bars of flat frame knitting machines. Thomas. G. Hilscher Firma. Ger. P. 711 561, Oct. 2, 1941. 3 pp. *Bibl. Sci. Ind. Reports 5,* 649 (May 16, 1947).

Drawing included. TTD: 9-48

Knitting. Purl knitting machine. Schneider & Reuthner. Ger. P. 712 506, Oct. 21, 1941. 4 pp. *Bibl. Sci. Ind. Reports 5,* 650 (May 16, 1947).

Drawing included. TTD: 9-48

Knitting. Circular knitting machine. Zeug. G. I. Heusel & Co. Ger. P. 712 601, Oct. 22, 1941. 5 pp. *Bibl. Sci. Ind. Reports 5,* 649 (May 16, 1947).

Drawings included. TTD: 9-48

Knitting. Method and flat frame knitting machine for making patterns with larger needle loops. Max Nebel. Ger. P. 712 909, Oct. 28, 1941. 5 pp. *Bibl. Sci. Ind. Reports 5,* 650 (May 16, 1947).

Drawing included. TTD: 9-48

Knitting. Flat frame knitting machine. Bahner. Louis Bahner Elbeo Werke. Ger. P. 713 186, Nov. 3, 1941. 4 pp. *Bibl. Sci. Ind. Reports 5,* 647 (May 16, 1947).

Drawing included. TTD: 9-48

Knitting. Inverted pleating mechanism on circular knitting machines with rotating needle cylinders. Schubert & Salzer Maschinenfabrik A. G. Ger. P. 713 645, Nov. 12, 1941. 5 pp. *Bibl. Sci. Ind. Reports 5,* 650 (May 16, 1947).

Drawing included. TTD: 9-48

Knitting. Reversible cam for circular knitting machines, especially double-cylinder circular knitting machines. Schubert & Salzer Maschinenfabrik A. G. Ger. P. 716 592, Jan. 23, 1942. 5 pp. *Bibl. Sci. Ind. Reports 5,* 563 (May 9, 1947).

Drawings included. TTD: 9-48

Knitting. Flat frame knitting machine and method of hanging over needle loops. Oertel. Seyfert & Donner. Ger. P. 716 768, Jan. 28, 1942. 5 pp. *Bibl. Sci. Ind. Reports 5,* 563 (May 9, 1947).

Drawing included. TTD: 9-48

Knitting. Backing apparatus for circular knitting machines. Haaga. Gerbrüder Haaga. Ger. P. 717 684, Feb. 19, 1942. 3 pp. *Bibl. Sci. Ind. Reports 5,* 648 (May 16, 1947).

Drawing included. TTD: 9-48

Knitting. Disconnecting mechanism for chain knitting machines. Paul Bretschneider. Ger. P. 718 242, Mar. 6, 1942. 5 pp. *Bibl. Sci. Ind. Reports 5,* 561 (May 9, 1947).

Drawing included. TTD: 9-48

Knitting. Purl-knitting machine with double-latch needles and a mechanism for transferring loops. Nuber. Reutlinger Strickmaschinenfabrik H. Stoll & Co. Ger. P. 720 381, May 4, 1942. 6 pp. *Bibl. Sci. Ind. Reports 5,* 562 (May 9, 1947).

Drawing included. TTD: 9-48

Knitting. Circular knitting machine with a fixed needle cylinder. Hofmann. Richard Uhlig Firma. Ger. P. 720 412, May 5, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 563 (May 9, 1947).

Drawing included. TTD: 9-48

Knitting. Cam lock for purl-knitting machines, especially for flat purl knitting machines. Heim. Reutlinger Strickmaschinenfabrik H. Stoll & Co. Ger. P. 722 569, July 13, 1942. 3 pp. *Bibl. Sci. Ind. Reports 5,* 562 (May 9, 1947).

Drawing included. TTD: 9-48

Knitting. Flat frame knitting machine. Verbeek. Karl Lieberknecht Firma. Ger. P. 723 585, Aug. 6, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 561 (May 9, 1947).

Drawing included. TTD: 9-48

Knitting combination fabrics. Circular knitting machine. Paul L. Thurston & Harold Welker (to Interwoven Stocking Co.). USP 2 430 792, Nov. 11, 1947.

A knitting machine and method of operation is provided whereby a tubular seamless article composed partially

of rib fabric, partially of terry fabric, and if desired partially of plain knit fabric, can be produced commercially and economically.

JHB TTD: 9-48

Knitting machine mechanism. Dial holding mechanism for knitting machines. Robt. H. Lawson (to Scott & Williams, Inc.). USP 2 428 230, Sept. 30, 1947.

This invention is applicable to rib knitting machines and relates to a mechanism which holds the needle or cam carriers stationary with respect to each other while permitting the passage of other parts.

SPH TTD: 9-48

Knitting machine mechanism. Mechanism for flat knitting machines for the automatic shock-free reversal of the cam parts at the guide-carriage reversing points. Mehnert. Elite-Diamantwerke A. G. Ger. P. 720 479, May 7, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 561 (May 9, 1947).

Drawing included. TTD: 9-48

Knitting needle. Knitting machine needle. Roy C. Amidon (to Vanity Fair Mills, Inc.). USP 2 429 210, Oct. 21, 1947.

A knitting machine needle having a shank and a beard connected by a bend is assembled with a tongue having a shank channeled to receive the needle shank without soldering, brazing, welding, or pinning. These needles can be manufactured in fine gages.

SPH TTD: 9-48

Knitting needle. Knitting machine needle. Jack Fontaine. USP 2 441 662, May 18, 1948.

A knitting machine needle is composed of a needle having a grooved body and hook at one end with a closing lever pivoted in the groove of the body so that one end of the closing lever works with the hook on the needle. The closing lever is actuated by either an abutment or small spring on the opposite end of the lever.

JED TTD: 9-48

Knitting needle. A needle which may be used for frame knitting, hanging-over knitting, or as an auxiliary needle. Max Nebel. Ger. P. 724 145, Aug. 19, 1942. 10 pp. *Bibl. Sci. Ind. Reports 5,* 562 (May 9, 1947). TTD: 9-48

Knitting needle. Needle latch opener for knitting machines. Chemnitzer Strickmaschinen-Fabrik. Ger. P. 727 886, Nov. 14, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 561 (May 9, 1947).

Drawing included. TTD: 9-48

Knitting needle mechanism. Machine for producing knitted fabric. Arthur Shortland (to Mellor Bromley & Co., Ltd.). USP 2 442 442, June 1, 1948.

The production of knitted fabrics and formation of various stitch effects, including press off, miss stitch, purl stitch, or a combination of such stitches, is accomplished by a method of knitting which involves closure of needle hooks so that the needles with closed hooks will not knit while needles with open hooks will knit.

JAW TTD: 9-48

Knitting needle mechanism. Knitting machine with a mechanism for opening needle latches by advancing the needles. Nuber. Reutlinger Strickmaschinenfabrik H. Stoll & Co. Ger. P. 719 755, Apr. 16, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 562 (May 9, 1947).

Drawing included. TTD: 9-48

Lace. Circular knitting machine for manufacturing lace. C. A. Roscher Söhne. Ger. P. 707 522, June 25, 1941. 5 pp. *Bibl. Sci. Ind. Reports 5,* 562 (May 9, 1947).

Drawings included. TTD: 9-48

Links-links knitting. Knitting machine of the links-links type. Henry H. Holmes & Albert H. Widdowson (to Wildt & Co., Ltd.). USP 2 442 412, June 1, 1948.

In a knitting machine of the links-links type, means for controlling the individually movable elements are provided which are adapted to cause said elements to dwell so that sliders, actuated to transfer their needles, automatically engage associated dwelling elements and are deflected for the purpose of liberating needles to be transferred.

JAW TTD: 9-48

Making knitting needles. Process for the manufacture of knitting needles, especially round knitting needles. Johann Moritz Rump Firma. Ger. P. 715 043, Dec. 12, 1941. 3 pp. *Bibl. Sci. Ind. Reports 5,* 562 (May 9, 1947).

Addition to patent 676 671. TTD: 9-48

Marking stockings. Machine for marking circular knit fabric for boarding. Ivan W. Grothey & Frank R. Page (to Scott & Williams, Inc.). USP 2 429 458, Oct. 21, 1947.

It is important that circular knit hosiery be put on the form correctly for the preboarding operation and since there is no seam it is difficult to get the stocking straight on the form. This invention provides means whereby a fugitive dye of contrasting color is applied to one or

2 wales on the front and back of the stocking. The guide marks should be offset several wales from the exact front and back wales so that both marks will be visible on one side of the thin board form.
SPH TTD: 9-48

Opposed needle beds. Knitting machine of the opposed needle bed type. Frederick E. Deans & Carlyle H. Wainwright (to The Bentley Engineering Co., Ltd.). USP 2 441 755, May 18, 1948.

In knitting machines of the opposed needle bed type, it is desirable that the beds be closely adjacent to each other, but it is difficult to accommodate elements in or movable into the gap between margins of the 2 beds. To overcome the difficulty, a needle bed having trick walls composed of individually slidable blades capable of projection and retraction at the margin of the bed is provided.
JED TTD: 9-48

Pattern mechanism. Pattern mechanism for circular knitting machines. Künemund. C. Terrot Söhne. Ger. P. 716 444, Jan. 21, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 563 (May 9, 1947).

Drawing included. TTD: 9-48

Pirn holder. Nylon pirn holder. Anon. *Textile Industries 112,* No. 1, 173-75 (Jan. 1948).

A novel method for processing 10 and 15 denier nylon on single-head, single-unit full-fashioned machines, is described. The device, adapted from the seamless knitting industry, is pictured and plans for its construction and installation are given. TTD: 9-48

Spread stitches. Means and method for making knitted fabrics with spread stitches. Harry J. Schmidt & Oscar Dojan. USP 2 428 529, Oct. 7, 1947.

This invention relates to a knitting machine of the full-fashioned type with improved means enabling the machine to knit a fabric containing spread loops either for ornamentation or to provide a run resistant cloth.
SPH TTD: 9-48

Stocking foot. John H. Mueller. USP 2 441 835, May 18, 1948.

The foot of full fashioned hosiery is shaped so that it will conform more nearly to the foot of the wearer, insuring greater ease and comfort by making the foot narrower immediately in front of the heel and widening it for the ball of the foot, then narrowing it for the toes.
JAW TTD: 9-48

Stockings. Flat frame knitting machine for the supplementary knitting of stocking heel parts. Verbeek. Karl Lieberknecht Firma. Ger. P. 712 562, Nov. 8, 1941. 5 pp. *Bibl. Sci. Ind. Reports 5,* 649 (May 16, 1947).

Drawing included. TTD: 9-48

Striped plush knitted fabrics. Method and mechanism for manufacturing circularly knitted striped plush fabrics. Fouquet & Franz. Ger. P. 716 591, Jan. 23, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 561 (May 9, 1947).

Drawing included. TTD: 9-48

Take-up mechanism. Take-up device for knitting machines. Fritz Lambach. USP 2 429 230, Oct. 21, 1947.

The take-up mechanism for knitting machines is designed so that the roller exerts a uniform force on the fabric over its entire width. The device is constructed so that it may be adjusted with great accuracy.
SPH TTD: 9-48

Thread clamp. Thread-clamping device for knitting machines, especially for flat frame knitting machines. Rother. Emil Richard Morgenstern. Ger. P. 726 266, Oct. 9, 1942. 3 pp. *Bibl. Sci. Ind. Reports 5,* 562 (May 9, 1947).

Drawing included. TTD: 9-48

Tricot knitting. Knitting machine. Geo. O. Young (to Vanity Fair Mills, Inc.). USP 2 428 405, Oct. 7, 1947.

A knitting machine of the tricot type is designed to provide 4 objectives, (1) a high speed, smooth running machine; (2) a machine in which hook needles with sliding tongues are employed; (3) a machine employing stationary sinkers and stationary nibs; (4) a machine in which needles with sliding tongues are moved together through a path resembling a closed figure 8.
SPH TTD: 9-48

Variable draw mechanism. Straight bar knitting machine. John E. Lynam & Patrick G. McCarthy (to William Cotton, Ltd.). USP 2 442 090, May 25, 1948.

A mechanism is applied to Cotton's patent or other straight bar knitting machines for driving a carrier with variable amplitude of traverse.
JAW TTD: 9-48

Varicose-vein stockings. Apparatus for the manufacture of seamless varicose-vein stockings. Louis Boucraut (to Société à Responsabilité Limitée: Les Fils De Valton & Co.). USP 2 441 118, May 4, 1948.

Elastic yarn is inserted at a uniform tension the entire

length of the stocking to provide a higher quality stocking at a lower cost, and increase production on automatic instead of hand operated knitting machines.
JAW TTD: 9-48

Warp guide. Warp guide for attachment to guide bars of warp knitting machines. Fritz Lambach. USP 2 429 231, Oct. 21, 1947.

A novel arrangement of the warp guides in a guide bar for a warp knitting machine allows guides to be placed at the point where the warp enters the guide bars. The removal of a wire pin opens one side of all guides and allows easy threading.
SPH TTD: 9-48

Warp knitting. Structure for suspending a guide bar from a bracket of a warp knitting machine. Fritz Lambach. USP 2 428 030, Sept. 30, 1947.

A structure is designed to support a guide bar from a bracket of a warp knitting machine.
SPH TTD: 9-48

Warp knitting. Warp knitting machine. Richard F. Eshleman (to American Viscose Corp.). USP 2 427 394, Sept. 16, 1947.

On a warp knitting machine which is operated by a series of cams, a lubricant container is provided to supply lubricant to the cam surfaces to take up any backlash between the cams and their followers.
SPH TTD: 9-48

Warp knitting. Warp knitting machine. Wm. D. Kellogg (to Aveco, Inc.). USP 2 427 395, Sept. 16, 1947.

This patent relates to a method of supplying a viscous, stable, non-corrosive liquid to the faces of the cams to reduce the clearance or play and to provide a cushioning effect between the cams and their followers.
SPH TTD: 9-48

Welt turning. Welt turning mechanism and method of turning welts. Gottlob Bitzer (to Textile Machine Works). USP 2 431 160, Nov. 18, 1947.

A welt-turning mechanism is described which is adaptable for use on full-fashioned and similar knitting machines.
JHB TTD: 9-48

Welt turning. Welt turning mechanism in straight bar knitting machines. Wm. A. Cooper & Wm. G. Macdonald (to William Cotton Ltd.). USP 2 428 514, Oct. 7, 1947.

Improvements to the welt turning mechanism of Cotton's patent and other straight bar knitting machines, intended for the manufacture of blanks for ladies' full

fashioned stockings, are made by providing supports for engaging the initial course in the neighborhood of the selvedges and means for lifting said supports in relation to the welting instruments.
SPH TTD: 9-48

Yarn guide. Flat frame knitting machine with an arrangement for achieving the desired movement of the yarn guide. Schubert & Salzer Maschinenfabrik A. G. Ger. P. 717 972, Feb. 27, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 562 (May 9, 1947).

Drawing included. TTD: 9-48

Control devices — IV 3 b

Automatic yarn cutting. Method for the automatic clamping and cutting of yarn in a flat or full-fashioned knitting machine and an automatic mechanism for carrying out said method. Fritz Lambach (to Robt. Reiner). USP 2 432 110, Dec. 9, 1947.

In a flat or full fashioned knitting machine, yarn extending from the yarn carrier to the fabric may be automatically clamped and cut after the completion of the fabric, the end being held until the knitting of a new fabric has been started.
JHB TTD: 9-48

Knitting. Flat frame knitting machine with a mechanism for automatically suspending the welt. Schubert & Salzer Maschinenfabrik A. G. Ger. P. 728 890, Dec. 12, 1942. 8 pp. *Bibl. Sci. Ind. Reports 5,* 650 (May 16, 1947). TTD: 9-48

Knitting pin. Knitting pin. Bernard G. Lewis. USP 2 443 540, June 15, 1948.

Knitting pins, needles and the like are provided with heads which not only will prevent them from rolling but which will afford suitable surfaces for carrying markings to indicate the gauge of the pin or other particulars.
JAW TTD: 9-48

Press-off detector. Knitting machine press-off multiple detector. Edw. Vossen (to Stop-Motion Devices Corp.). USP 2 441 522, May 11, 1948.

A press-off detector consists of a series of feeler members movably supported at spaced positions around the cylinder of a knitting machine and held down by engagement against the knitted material. When a press-off starts, a feeler member moves upward and instantly stops the knitting machine, thus preventing a complete press-off of the knitted fabric.
JED TTD: 9-48

Setting welt bars. Mechanism for the automatic setting of welt bars on flat frame knitting machines.

Karl Lieberknecht Firma. Ger. P. 709 509, Aug. 19, 1941. 4 pp. *Bibl. Sci. Ind. Reports 5,* 562 (May 9, 1947).

Drawing included. TTD: 9-48

Stop motion. Fabric contacting circuit closer for knitting machines. Michael Wachsman. USP 2 429 004, Oct. 14, 1947.

A feeler in contact with the knitted fabric detects tears, runs, dropped stitches, and other irregularities, and closes an electrical circuit. The closed circuit operates a solenoid or other device to stop the machine.
SPH TTD: 9-48

Yarn guide. Flat knitting machine with controlled yarn guiding. Schnabel & Gräser. Claes & Co. Komm.-Ges. Ger. P. 719 669, Apr. 14, 1942. 6 pp. *Bibl. Sci. Ind. Reports 5,* 561 (May 9, 1947).

Drawing included. TTD: 9-48

Thread guide. Thread guide and mounting for tricot warp knitting. Gustave T. Broberg (to The Torrington Co.). USP 2 428 448, Oct. 7, 1947.

Thread guides and mountings for tricot warp knitting are designed so that they are assembled into thread guide holders in such a way that any guide may be removed without disturbing the other guides in the holder.
SPH TTD: 9-48

Fabric construction IV 3 c

Elastic fabric. Textile fabric. Jos. A. Krasnov & Max M. Kuller (to Sure-Fit Products Co.). USP 2 429 187, Oct. 14, 1947.

An elastic fabric, to be used primarily for slip covers for overstuffed upholstered furniture, is produced by interknitting cotton threads and cotton-covered rubber thread in such a way as to contract the fabric in 2 directions to form small pockets. This method of knitting imparts certain desirable features of stretch to the fabric.
SPH TTD: 9-48

Jacquard knitting. Method of manufacturing jacquard goods on flat knitting machines. Mehnert. Elite-Diamantwerke A. G. Ger. P. 707 695, June 30, 1941. 5 pp. *Bibl. Sci. Ind. Reports 5,* 648 (May 16, 1947).

Drawings included. TTD: 9-48

Knitting. Method of manufacturing circular and truncated cone-shaped knitted goods. Neuber. Elite-Diamantwerke A. G. Ger. P. 707 661, July 11, 1941. 3 pp. *Bibl. Sci. Ind. Reports 5,* 561 (May 9, 1947).

Drawing included. TTD: 9-48

Knitting. Method of manufacturing back-drawn frame knitted goods. Max Nebel. Ger. P. 712 908, Oct. 28, 1941. 4 pp. *Bibl. Sci. Ind. Reports 5,* 562 (May 9, 1947).

Drawing included. TTD: 9-48

Knitting. Method and mechanism for manufacturing patterned piled fabric on circular knitting machines. Schubert & Salzer Maschinenfabrik A. G. Ger. P. 706 809, June 6, 1941. 3 pp. *Bibl. Sci. Ind. Reports 5,* 650 (May 16, 1947).

Drawing included. TTD: 9-48

Ornamented fabric. Art of ornamented knitted article manufacture. Emery F. Wirtz (to Zwicker Knitting Mills). USP 2 427 891, Sept. 23, 1947.

A method is described of knitting articles with a simulated cable stitching by machine so that the finished piece will have the appearance of being hand-knit.
SPH TTD: 9-48

Pleated goods. Method and knitting machine for manufacturing pleated interlock goods. Trikotfabriken J. Schiesser A. G. Ger. P. 707 995, July 9, 1941. 5 pp. *Bibl. Sci. Ind. Reports 5,* 651 (May 16, 1947).

Drawing included. TTD: 9-48

Rubber warp. Flat warp knitted fabric with rubber warp thread. Paul Schönfeld. Ger. P. 722 219, July 4, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 650 (May 16, 1947).

Drawing included. TTD: 9-48

Rubber weft. Method of manufacturing cloth hose with a rubber weft on a circular knitting machine. Richard Wenzel. Ger. P. 705 541, May 2, 1941. 5 pp. *Bibl. Sci. Ind. Reports 5,* 563 (May 9, 1947).

Drawing included. TTD: 9-48

Shaped stockings. Method of manufacturing properly shaped stockings with French heels on flat frame knitting machines. Hackebeil. G. Hilscher Firma. Ger. P. 723 439, Aug. 5, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 561 (May 9, 1947).

Drawing included. TTD: 9-48

Shaped stockings. Method of knitting properly shaped stockings with French heels on a flat frame knitting machine. Richard Frenzel & Ludwig Bahner. Ger. P. 716 405, Jan. 22, 1942. 5 pp. *Bibl. Sci. Ind. Reports 5,* 561 (May 9, 1947).

Drawing included. TTD: 9-48

Stocking heels. Method of manufacturing French heels on reversed stockings with a flat frame knitting machine. Bernhardt. C. G. Bernhardt Strumpffabrik. Ger. P. 715 625, Jan. 3, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 560 (May 9, 1947).

Drawing included. TTD: 9-48

Stocking heels. Method of knitting heel parts on single-piece stockings without heels with flat frame knitting machines. Eissner. Karl Lieberknecht Firma. Ger. P. 715 770, Jan. 7, 1942. 5 pp. *Bibl. Sci. Ind. Reports 5,* 562 (May 9, 1947).

Drawing included. TTD: 9-48

Stocking welt. Stocking with a welt, especially for ladies. Schubert & Salzer Maschinenfabrik A. G. Ger. P. 708 481, July 22, 1941. 3 pp. *Bibl. Sci. Ind. Reports 5,* 562 (May 9, 1947).

Drawing included. TTD: 9-48

Stockings. Method of manufacturing stockings in a single operation on flat frame knitting machines. Schubert & Salzer Maschinenfabrik A. G. Ger. P. 714 924, Dec. 10, 1941. 3 pp. *Bibl. Sci. Ind. Reports 5,* 650 (May 16, 1947).

Drawing included. TTD: 9-48

Stockings. Method for widening the part of a stocking between the ankle and sole parts on flat frame knitting machines. Müller. G. Hilscher Firma. Ger. P. 716 406, Jan. 19, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 649 (May 16, 1947). TTD: 9-48

Stockings. Procedure for the manufacture of stockings and stockings manufactured according to this process. Tillmanns. Schrepel (Hugo) Firma. Ger. P. 728 782, Dec. 4, 1942. 2 pp. *Bibl. Sci. Ind. Reports 5,* 650 (May 16, 1947). TTD: 9-48

Two way stretch. Elastic garment. Norman B. Reed (to Surgical Products Inc.). USP 2 441 443, May 11, 1948.

A method is described for producing a 2-way stretch seamless knitted elastic garment. Tension in elastic yarn is controlled by passing the yarn between a pair of reversed conical rollers. The length of the yarn fed to the needles may be varied with the length of stitch.
VBS TTD: 9-48

Special fabrics IV 4

Double carpet. Procedure for weaving double carpets with perfect edges by means of 2 shuttles. Born. Tonnar (Felix) GmbH. Ger. P. 724 421, Aug. 26, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 651 (May 16, 1947).

Drawing included. TTD: 9-48

Lace fabrics. Method of manufacturing continuous diagonally ribbed lace fabrics. Paul Schönfeld. Ger. P. 719 475, Apr. 9, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 562 (May 9, 1947).

Drawing included. TTD: 9-48

Macrame. Procedure for making macrame. Gertrud Hölken. Ger. P. 721 626, June 11, 1942. 3 pp. *Bibl. Sci. Ind. Reports 5,* 649 (May 16, 1947).

Drawing included. TTD: 9-48

Pile fabric. Arrangement for weaving double velvet and double plush from plain threads by using a spring-action controlled rod which trains the filling thread. Brackelmann & Jansen. Josef Brackelmann & others. Ger. P. 728 998, Dec. 7, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 648 (May 16, 1947).

Drawing included. TTD: 9-48

Rugs. Printed rugs reach untapped market. Anon. *Am. Wool Cotton Reptr. 62,* No. 28, 19, 35 (July 8, 1948).

A brief note on a new printed rug, Glamorug which consists of layers of raw wool folded and threaded on to a jute backing. The rug is printed with fade-resistant dyes on giant six-color presses. TTD: 9-48

Tarpaulins. The tarpaulin industry. Anon. *Fibres 8,* No. 10, 332-36 (Oct. 1947).

A visit to the Great Western Railway Wagon Sheeting Headquarters at Worcestor is described. The operation of the plant and its methods of manufacture are noted briefly. The tarpaulins, used for covering goods in transit, were made of a mixture of flax and hemp prior to 1939 and had a life of slightly over 5 years. During the war, cotton was substituted and the average life per tarpaulin dropped to less than 3 years, due in part to heavier usage. A composition of red bauxite and boiled linseed oil applied at the rate of 1 lb. per square yard is used for water-proofing. TTD: 9-48

Fabric processing IV 5

Boarding hosiery. Static eliminators reduce costs in boarding nylon hosiery. Geo. Ransom. *Textile Age 12,* No. 6, 42-43, 46-47 (June, 1948).

Automatic boarding machines are being equipped with radio-active static eliminators which do away with all difficulties due to static, reduce mends, improve quality, and make straightening out of hosiery by hand unnecessary. The static eliminator is made of a radioactive material evenly dispersed in a thin metal foil placed in a shield. TTD: 9-48

Bobbin replenishing. Sewing machine. Harry Sebell (½ to Richard W. McGann & ½ to Bell Products Corp.). USP 2 438 459, Mar. 23, 1948.

A bobbin-replenishing mechanism extracts an empty bobbin from the under-thread mechanism of a 2-thread sewing mechine and inserts a full bobbin from a magazine.

JHB TTD: 9-48

Fabric drier. Apparatus for feeding and drying fabrics. Harry W. Butterworth, Jr., Samuel & Mortimer Cohn, Jules G. Walter (to Samcoe Holding Corporation). USP 2 427 943, Sept. 23, 1947.

Certain fabrics, such as knitted goods, synthetics, etc., are subject to wrinkling, stretching, and distortion during the drying processes. This invention relates to a dryer in which the fabric is carried on reels, the speeds of which are controlled by the tension on the fabric. Warm air is provided in chambers fitted with nozzles which cause the air to impinge upon the fabric. Controls are provided to regulate the moisture content of the finished cloth.

SPH TTD: 9-48

Fabric receiving roll. Receiving roll. Marion W. Heiss (to Cone Mills Corp.). USP 2 442 127, May 25, 1948.

This patent describes an apparatus for winding up long yardages of goods woven on a loom or knitted on a warp knitting machine so that large areas of the cloth are visible for inspection. The device consists of an aperture in the floor below the loom or knitting machine through which the cloth passes to a receiving roll suspended below the floor. The receiving roll is so designed that a considerable length of the cloth is exposed for inspection prior to being wound up on the roll.

JED TTD: 9-48

Fulling mill. Fulling mill. Frank B. Morrill (to The Jas. Hunter Machine Co.). USP 2 442 742, June 1, 1948.

In a mill for fulling cloth, the cloth passes through opposed fulling rolls which compress the cloth and feed it to a crimp box. The cloth is then fed reversely through the rolls to a succeeding crimp box, but a small amount of the cloth continues to be retained in the first crimp box. The forward and backward movement is continued until the total yardage of cloth has been fulled and has accumulated in the first crimp box.

CCJ TTD: 9-48

Holding selvedges. Device for holding the selvedges for the introduction of the fabric into stretching and drying machines. Georg Schlenk. Ger. P. 722 550, July 13, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 650 (May 16, 1947).

Drawing included. TTD: 9-48

Home sewing machine. Sewing machine. Bernard A. Schmitt. USP 2 435 292, Feb. 3, 1948.

The construction and arrangement of the essential parts in a household type sewing machine contribute to simplified manufacture and maintenance, and materially reduce the noise of operation.

JHB TTD: 9-48

Lubrication. Sewing machine loop-taker mechanism. Chas. A. Kessler (to The Singer Mfg. Co.). USP 2 441 937, May 18, 1948.

Means are provided for obtaining proper lubrication of the thread-carrier raceway of a sewing machine loop-taker at any speed of operation of the machine.

JHB TTD: 9-48

Lubrication. Lubricating mechanism for sewing-machine loop takers. Wm. C. Van Ness (to the Singer Mfg. Co.). USP 2 441 942, May 18, 1948.

Proper lubrication of the thread-carrier raceway of a sewing machine loop-taker is insured, regardless of substantial variations in the levels of the lubricant supply.

JHB TTD: 9-48

Overedge sewing. Overedge sewing machine. Nicholaus Knaus & Percival J. Anton (to The Singer Mfg. Co.). USP 2 434 619, Jan. 13, 1948.

An improved hem folder and edge guide automatically compensate for variations in the work, thereby insuring needle penetration of the folded edge, even under adverse conditions.

JHB TTD: 9-48

Pre-boarding and dyeing. Dyeing and pre-boarding. J. L. Wauters. *Knitter 12,* No. 2, 47-8 (Feb. 1948).

A brief discussion of difficulties encountered in pre-boarding and dyeing 15-denier hosiery. Directions are given for a 2-bath dyeing method at 160° F. TTD: 9-48

Rubber coated fabric. Selvedge trimmer. Nicholas Mong (to The Gen. Tire & Rubber Co.). USP 2 428 430, Oct. 7, 1947.

A blade is mounted for free lateral movement and is held by gravity in an operative position to trim the excess rubber from the edge of rubber-coated fabric as the fabric passes over the calender roll.

SPH TTD: 9-48

Sewing machine. History of the sewing machine. G. B. Tobey, Willcox & Gibbs Sewing Machine Co.

Textile Industries 112, No. 1, 176, 179-80, 183, 187, 189 (Jan. 1948).

The development of the sewing machine from its beginning through the middle of the 19th century is discussed. TTD: 9-48

Sewing machine. Sewing machine. Chas. F. Rubel (to Union Special Machine Co.). USP 2 440 615, Apr. 27, 1948.

Improved devices for supply, manipulating, controlling, and guiding the needle thread facilitate the construction and operation of the common "family" type sewing machine.
SPH TTD: 9-48

Sewing machine drive. Sewing machine. Matthew G. Ivandick (to Free Sewing Machine Co.). USP 2 438 636, Mar. 30, 1948.

A practical form of one-to-one constant speed drive for sewing machines is provided.
JHB TTD: 9-48

Sewing machine. Sewing machine. Andrew B. Clayton (to The Singer Mfg. Co.). USP 2 435 937, Feb. 10, 1948.

A relatively small, lightweight, "domestic" type sewing machine has been designed which permits the selective performance of any one of a plurality of unlike sewing operations.
JHB TTD: 9-48

Thread control. Sewing machine. Norman V. Christensen (to Union Special Machine Co.). USP 2 434 608, Jan. 13, 1948.

An improved thread-controlling device supplies extra thread to the needle in the particular stitch-forming cycle in which it is needed.
JHB TTD: 9-48

Thread pull-off. Sewing machine. Jos. H. Pikul (to The Reece Corp.). USP 2 436 449, Feb. 24, 1948.

An improved thread pull-off controls the rate at which the extra thread is drawn from the thread supply so that no appreciable slackening occurs.
JHB TTD: 9-48

Thread pull-off. Thread pull-off mechanism for sewing machines. Alfred R. Wood (to The Singer Mfg. Co.). USP 2 438 833, Mar. 30, 1948.

A pull-off mechanism draws a uniform length of bobbin thread from the supply during each stitch-forming cycle.
JHB TTD: 9-48

Weft straightener. Weft straightener. Robt. W. Vose & Chas. H. Plummer (to Chicopee Mfg. Corp.). USP 2 427 753, Sept. 23, 1947.

As the cloth travels toward a tenter frame or other finishing operation, it passes through a pair of mangle rolls and over a conventional canting roll. Light is applied to the fabric in a flat beam approximately parallel to the direction of travel. When the weft is straight, little light is reflected to the side. When the weft is skewed, more light is reflected to one side than to the other. This light is measured by means of photoelectric cells in a balanced circuit. The unbalance is used to actuate an amplifier which operates the motor to change the position of the canting roll. A change in the arrangement will also correct bowed weft.
SPH TTD: 9-48

Wet processing. Apparatus for treating fabrics. Boyce C. Bond. USP 2 441 308, May 11, 1948.

As cloth is submerged in conventional wet processing tanks, it passes between 2 pressure casings which are also submerged and placed close together. Treating fluid is sprayed from these casings at high velocity against each side of the fabric. In another tank, submerged adjustible squeeze rolls exert pressure on the fabric being processed. The apparatus is claimed to apply to any textile wet finishing or treating operation and to improve the uniformity of the material processed.
LCL TTD: 9-48

Work feed dog. Sewing machine. Dave Fischbein. USP 2 442 647, June 1, 1948.

A means is provided for operating the work feed dog in a sewing machine. TTD: 9-48

Fabric applications IV 6

Fabric tubes. Means for turning fabric tubes. Walter A. Plummer, Jr. USP 2 428 943, Oct. 14, 1947.

A device is designed to fold a strip of cloth and sew the edges together to form a tube. After the tube of cloth is formed, it is folded back upon itself through a metal tube which turns the tube of cloth inside out. The fabric tube is flattened and formed into a roll.
SPH TTD: 9-48

Fuel tank. Improved tank for hydrocarbon fuels. Jas. A. Merrill & Lorin B. Sebrill (to Wingfoot Corp.). USP 2 440 965, May 4, 1948.

Self-sealing containers are described which are resistant to the solvent action of aromatic containing liquid fuels. A nylon sheet is applied to the inner surface of the laminar container by heat, spraying or painting.
VBS TTD: 9-48

CHEMICAL RAW MATERIALS V

Acrylonitrile. Manufacture of acrylonitrile from acetylene and HCN. Reginald T. Foster (to Imperial Chemical Industries). USP 2 442 040, May 25, 1948.

The preparation of acrylonitrile by the reaction of acetylene and hydrocyanic acid in the presence of an aqueous cuprous halide catalyst solution is improved by the inclusion of a water-soluble mercury salt, such as mercuric chloride, in the catalyst solution.

WPU, jr. TTD: 9-48

Polyvinyl acetal resins. Preparation of polyvinyl acetal resins. Gelu S. Stamatoff (to E. I. du Pont de Nemours & Co.). USP 2 440 730, May 4, 1947.

An improved process for preparing polyvinyl acetal resins is accomplished by a novel method of introducing the aqueous reaction medium containing the polyvinyl alcohol and the aldehyde into the heated reaction kettle so as to avoid the precipitated resin adhering to the sidewalls.

GNR TTD: 9-48

Silicones. Silicones; new hydrophobic materials useful in the textile industry. F. L. Dennett, Dow Corning Corp. *Papers Am. Assoc. Textile Technologists 3,* No. 3, 145-51 (June, 1948).

Applications of silicones to textile processes are reviewed briefly. An antifoam compound, a silicone rubber for waterproofing, and a new liquid silicone (DC 1107) for waterproofing organic fabrics are discussed. The new liquid silicone may be applied as an emulsion with conventional equipment, and curing five minutes at 300° F develops maximum properties. No final washing is necessary because harmful products are neither present nor developed during curing. TTD: 9-48

Thermosetting resins. Low-loss thermosetting resins. Jack Swiss & Newton C. Foster (to Westinghouse Electric Corp.). USP 2 439 953, Apr. 20, 1948.

A thermosetting resin is claimed which has the following properties: low power factor, low electrical loss factor, infusible at or below 250° C, and relatively inert to hot oil dielectric liquids. The resin is made by chemically reacting 95% to 75% of styrene with 5% to 25% of the reaction product of an unsaturated alpha-beta ethylenic dicarboxylic acid, such as maleic anhydride, reacting with the polyhydric alcohol ester of an hydroxylated unsaturated fatty acid, such as castor oil. The proper mixture is heated for 4 hours at 100° to 140° C.

GNR TTD: 9-48

Water. Effect of chemical agents on iron bacteria.

Kerman Duchon & Lewis B. Miller. *Paper Trade J.,* 126, No. 4, 47-58 (Jan. 22, 1948).

"Iron Bacteria" are defined as "groups of organisms capable of withdrawing iron from the water in which they live and depositing it in the form of hydrated ferric hydroxide on or in their mucilagenous surfaces." These organisms adhere to the inside surfaces of pipes and tanks and, upon breaking loose, are carried along with the water. In the manufacture of high grade textiles, the presence of such clumps of bacteria containing iron compounds are very troublesome, causing spots, stains, and discoloration. Of a number of chemical substances tested, it was found that chlorine or hypochlorite appeared to be the most effective in controlling bacterial growth. TTD: 9-48

Plastics and elastomers V 1

High polymers. The chemistry of high polymers. H. P. Staudinger. *J. Soc. Dyers Colourists 63,* No. 10, 313-19 (Oct. 1947).

Modification of polymer properties may be effected at various stages in the manufacture of the polymer and by various means, such as (1) Changes in the chemical constitution of the monomer, (2) changes in the conditions of polymerization affecting molecular size, distribution, and configuration of the polymer, (3) copolymerization with bi or tetra-functional monomers, (4) after-treatment of the polymer by (a) physical means (malaxation, extraction, degradation) and (b) chemical means (saponification, esterification, etherification, acetalyzation, hydrogenation, halogenation, de-halogenation, diazotization), (5) compounding (admixture of solids or liquids), viz. (a) plasticizing and (b) filling. In practice, all methods are not technically and economically feasible. TTD: 9-48

Polymers. Determination of refractive index of polymers. Richard H. Wiley & Patrick H. Hobson. *Anal. Chemistry 20,* No. 6, 520-23 (June, 1948).

Methods of determining the refractive index of amorphous polymers are summarized. The Abbé refractometer, used most extensively for the determination of the refractive indexes of both opaque and transparent polymers, is described. Cellulose and polyamides are among the materials studied. 45 references.

TTD: 9-48

Protein-resin adhesive. Process for making soybean protein-phenolic resin adhesive and product. Russell H. Hieronymus (to The Drackett Co.). USP 2 441 946, May 25, 1948.

A waterproof protein-resin adhesive capable of setting under heat and pressure to an infusible state is de-

scribed. The adhesive is prepared by mixing an aqueous alkaline solution of an alkali-catalyzed phenol-formaldehyde resin, containing no unchanged phenol but 1%-3% unchanged formaldehyde, with a soybean protein and drying the gel produced to 10%-17% moisture. On milling this material with an alkali metal hydroxide or carbonate, a brittle mass is obtained which can be ground to a fine water-dispersible powder.

GNR TTD: 9-48

Translucent acetate plastic. Light-diffusing cellulose acetate compositions. Jos. E. G. Lahousse & Albert Renouprez (to Societe Des Usines Chimiques Rhone-Poulenc). USP 2 443 918, June 22, 1948.

Discrete particles of a compatible substance of different refractive index from that of the matrix are incorporated in secondary cellulose acetate in order to cause diffusion of transmitted light by the plastic article. Cellulose triacetate and methyl cellulose are cited as examples of the additive.

MC TTD: 9-48

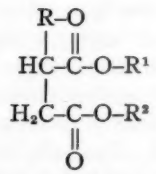
Urea-formaldehyde resin. Plasticized urea-formaldehyde resin. James Ranald Alexander, Donald Burton, & Frederic Hausmann (to William Walker & Sons Limited). USP 2 443 368, June 15, 1948.

Water-soluble amino-formaldehyde resins, especially those prepared from urea and formaldehyde, are plasticized by an alkali salt of a lactate, such as sodium lactate. The addition of the lactate salt toughens the resin and prevents it from drying and cracking.

WPU, jr. TTD: 9-48

Vinyl resins. Vinyl resins containing alkenyl succinic esters and method of making. Leslie T. Sutherland (to Allied Chemical & Dye Corp.). USP 2 440 985, May 4, 1948.

A new type of plasticizer for use with vinyl resin compositions which imparts excellent flexibility over a wide range of temperature, high tensile strength, and ability to withstand elevated temperatures for prolonged periods of time without undue loss of plasticizer by volatilization is described. These plasticizers are esters of the general formula,



in which R is an alkenyl group of 3-14 carbons and R^1 and R^2 are the same or different hydrocarbon radicals containing at least 5 C atoms. Best results are obtained when R contains 8-12 C atoms and R^1 and R^2 each contain not more than 8 C atoms.

GNR TTD: 9-48

Surface-active compounds V 2

Detergency. Modern aids to cleanliness—industrial, public and personal. O. M. Morgan, Natl. Aniline. *Am. Dyestuff Rptr. 36,* No. 21, 601-08 (Oct. 20, 1947).

The article reviews the applications of modern synthetic organic detergents in the cleaning and sanitation programs in factories, public meeting places, and homes. Special reference is given to uses in the textile industry. Nacconol NR was the detergent used for most of the experimental data presented.

WPU, jr. TTD: 9-48

Detergency. Studies in detergency, I. The oily constituent in naturally occurring domestic dirt. C. B. Brown. *Research 1,* No. 1, 46-8 (Oct. 1947).

Artificial soiling mixtures used by different investigators in the study of detergency vary widely in the amount of the oil component. Precise analytical data on the oil constituent of naturally occurring dirt was lacking. A study was made of the amount and composition of the oil component of the dirt present on domestically soiled fabrics such as cotton shirts, linen pillow-cases, tea-towels, woolen socks, and soft linen collars. The amount of oil present (on weight of fabric) was found to vary from 0.25% on the shirts to 1.2% on the collars. The average composition of the oil is given also. TTD: 9-48

Detergent aid. Research on the favorable influence of cellulose glycolate on the properties of detergents. *Melliand Textilber. 28,* No. 10, 345-49 (Oct. 1947); *Chimie et Industrie 59,* No. 5, 480 (May, 1948).

The cleansing and foaming properties of detergents are considerably improved by the addition of sodium cellulose glycolate, but their wetting properties do not seem to be affected. Best results are obtained when the bath contains about 75% of the glycolate and the temperature is above 50° C. Cloth washed in this way is whiter, cleaner, and more agreeable to the touch. TTD: 9-48

Detergents. The chemistry and application of detergents. J. A. Hill. *J. Soc. Dyers Colourists 63,* No. 10, 319-22 (Oct. 1947).

Various types of detergents and their properties are discussed. The limitations of a detergent must be considered because no one product is likely to be satisfactory for all purposes. TTD: 9-48

Detergents. Mercerizing agent. Brodersen & Waldmüller. I. G. Farbenindustrie, Zetko report. Enlargement print of Frames 1131-1136 of FIAT Microfilm Reel C 60, PB 176 57, Mar. 1933. 6 pp. PB L 639 65. *Bibl. Sci. Ind. Reports 5,* 570 (May 16, 1947). Price: $1.00 (Microfilm or Photostat); *in German.*

The alkali salts of butyric and valeric acids proved to be good detergents for mercerizing liquors but their odor precludes their use. This disadvantage could be avoided by the preparation of such acids, the carbon chain of which is interrupted by the hetero-atom or hetero-group. The butyl ether of glycolic acid, prepared by the reaction of chloro acetic acid ester with sodium butyrate and subsequent saponification, proved to be a good detergent for mercerizing liquors without the unpleasant smell. It was concluded that known detergents can be used for mercerizing liquors if the size of their molecules is diminished. In persuance of this finding, the Nekals of the benzene series, (the sulfonic acids of alkyl benzenes), proved to be good detergents for mercerizing. Isopropyl toluene sulfonic acid was employed as detergent 428. The detergent action of these compounds is based on their ability to reduce the surface tension of the mercerizing liquor which implies an increase of the foam formation which is a severe objection in the handling of such liquors. Substances soluble in strong alkalies without reducing their surface tension, and which are adapted to bring about the solution of alcohols was sought. Phenol polyhalides proved to be such mercerizing agents without increasing the foaming capacity of the liquor. TTD: 9-48

Wetting agents. Wetting agents for mercerization. Brodersen. I. G. Farbenindustrie, Zetko report. Enlargement print of Frames 1780-1783 of FIAT Microfilm Reel C 60, PB 176 57, Mar. 1934. 4 pp. PB L 640 82. *Bibl. Sci. Ind. Reports 5,* 582 (May 16, 1947). Price: $1.00 (Microfilm or Photostat); *in German.*

Earlier products, most of which were discontinued are reviewed. The best product is obtained by introducing one mol of chlorine to each mol of xylenol. (Patent application I 47494). The effect of this substance could be further improved by adding an alkyl sulfamide of a sulfonic acid. that is 2% of toluene sulfonbutylamide (Patent application I 48933). TTD: 9-48

CHEMICAL PROCESSING VI

Application of latex. Method of treating organic fabric. Alger L. Ward (to The United Gas Improvement Co.). USP 2 441 523, May 11, 1948.

A method of applying a synthetic rubber latex having superior "tack", and suitable for coating and impregnating fabrics having "greasy" fibers, is described. The latex is synthesized from certain "light oil" fractions containing styrene or its ring-methylated homologues, conjugated diolefines such as isoprene, and aromatic non-polymerizable oil such as xylene.

MC TTD: 9-48

Cellulose coated textiles. Treatment of textile material with alkaline cellulose zincate solutions. Sidney M. Edelstein. USP 2 442 973, June 8, 1948.

Cellulosic or glass fibers and fabrics are given a durable precipitated-cellulose coating when treated with an alkaline metal zincate solution containing dissolved cellulose, which is subsequently precipitated on the textile material by acidification, or by passage through a mercerizing liquor, or by other methods. The precipitated coating is then washed to remove most of the zinc. The final treatment, which imparts desirable properties such as mildew resistance, must be alkaline in order to insolubilize residual zinc salts.

MC TTD: 9-48

Cholesterol. Cholesterol now made from wool grease. Howard C. E. Johnson. *Chem. Industries 62,* No. 6, 922, 923 (June, 1948).

Wool grease has been known as the largest source of cholesterol since 1873, but the difficulty of separating cholesterol from wool grease has hindered the use of this material in the production of cholesterol. The American Chemical Paint Co. has developed a process which may eventually double the annual output of cholesterol from wool grease in the United States. The process essentially refines the wool grease, removing water and dirt. The fatty acid soaps are then saponified and separated from the unsaponifiable fraction, and cholesterol is obtained by solvent extraction. Cholesterol is used extensively in the biochemical industry.

LCL TTD: 9-48

Coated fabric. Article coated with N-alkoxymethyl polyamide and process of making same. B. Graham & H. S. Turner (to E. I. du Pont de Nemours & Co.). USP 2 443 450, June 15, 1948.

Reduced tackiness, increased flex strength and abrasion resistance, and improved solubility in coating solvents are obtained for the modified nylon resins known as N-alkoxymethyl polyamides by synthesizing said resin from unmodified polyamide having a high relative viscosity and so controlling the chemical modification as to yield N-alkoxymethyl polyamide containing at least 28% substituted amide nitrogens, of which not more than 4% are methylol substituted. The resin described may be applied over previously applied dissimilar coatings to improve their surface qualities, or may be used as the principal coating agent.

MJC TTD: 9-48

Coating device. Coating device. Ernest K. Bauer (to Am. Viscose Corp.). USP 2 442 335, June 1, 1948.

Coatings or impregnants are applied to yarns, cables, cords, ribbons, etc., of any material by means of 2 disc plates made so that an adjustable parallel space exists between them. The processing material passes through this space above the center of the plates. The discs can be rotated with their lower portions immersed in the processing medium; or, this medium can be fed by means of a third plate.

LCL TTD: 9-48

Elastic nylon fabrics. Process of making nylon fabrics elastic by treatment with formaldehyde. Allan K. Schneider (to E. I. du Pont de Nemours & Co.). USP 2 441 085, May 4, 1948.

Substantially undrawn, unoriented, nylon fibers are rendered highly elastic on treatment with alcohol, formaldehyde, and acid catalyst, the modified product being known as N-alkoxymethyl polyamide. Weaving of such yarns presents difficulties because of this elasticity. By weaving unstretched, or only partly stretched nylon filaments either as warp, filling, or both, and treating the resultant fabric as described, a one-way or two-way stretch fabric is produced. Relatively inelastic, non-active fibres such as cotton, silk, stretched nylon, etc. may be used for filling or warp.

MC TTD: 9-48

Grey goods defects. Finishing impaired by grey goods defects. R. E. Rupp, Pacific Mills. (Address before S. C. Section of the Southern Textile Association, Nov. 22, 1947). *Textile Industries 112,* No. 1, 143 (Jan. 1948).

The types of defects found in grey goods and how they affect the finisher are briefly discussed. TTD: 9-48

Low electrical resistance. Textile material of comparatively low electric resistance and method of producing the same. Kenneth H. Barnard and Melville J. Blackwood (to Pacific Mills). USP 2 443 782, June 22, 1948.

A method of making fibrous textile materials with comparatively low electrical resistance, is described. The material is first freed from all impurities by thorough washing. After impregnation with a cationic agent of positive electrical charge, such as a tetraalkyl quaternary ammonium halide, the material is squeezed and dried. Finally it is impregnated with a stabilized aqueous dispersion of an electrical conductive substance of negative charge, such as colloidal carbon black or graphite, washed several times to remove the excess, and then squeezed and dried again. The drying permanently fixes the adsorbed black so that it is not removed by water or

solvent washes. Conductive material so made can be used in the manufacture of a transmission belt, tire cords, etc.

GNR TTD: 9-48

Slasher drives. Electrical slasher drives. C. E. Center, Westinghouse Electric Corp. *Am. Wool Cotton Reptr. 62,* No. 28, 11-13, 52 (July 8, 1948). (See TTD: *8,* 439).

A description of the various electro-mechanical drives used on slashers. Details of their operation are given with diagrammatic sketches of their wiring. TTD: 9-48

Stocking finishing. Device on stocking-finishing machines for collecting the treating liquid. Fritz Schuster. Ger. P. 717 021, Feb. 4, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 651 (May 16, 1947). TTD: 9-48

Textile chemicals. H. B. Goldstein. Qualitative analysis of textile processing agents. H. B. Goldstein, Warwick Chemical Co. *Am. Dyestuff Reptr. 36,* No. 22, 629-40 (Nov. 3, 1947).

A useful outline for the identification of textile processing agents by type is given. A large amount of data is presented by means of which these agents may be classified on the basis of preliminary tests, and the types within classes further identified by additional qualitative procedures.

WPU, jr. TTD: 9-48

Treating tire cord. Method of treating tire cord. Howard J. Philipp (to U. S. of Am.). USP 2 444 064, June 29, 1948.

A tire cord which combines high induced strength with any desired elongation is obtained by a process which consists of 2 steps. The first step increases the strength of the cord by wetting the cotton cord with a swelling agent, subjecting the cord to a tension closely approaching its maximum tensile strength, and simultaneously heating it to dryness. The second step in the process increases the elongation characteristic of the cord by re-wetting the cotton cord with a swelling agent, stretching it, and after releasing the tension, drying the cord. TTD: 9-48

Water-soluble materials. Manufacture of water-soluble textile materials. Robt. P. Roberts (to Celanese Corp. of Am.). USP 2 439 865, Apr. 20, 1948.

Textile fabrics having a relatively high tenacity when dry, but capable of being dissolved by water, are prepared by impregnating a cotton fabric with a caustic alkali solution of at least 35% concentration, and subjecting the impregnated materials to the action of an etherifying agent under conditions such that the cellulose is wholly

converted into a water-soluble cellulose ether. Use of methyl chloride gave a product soluble in cold water, while use of acrylonitrile and methyl chloride in succession gave a product soluble in both cold and hot water.
WPU, jr. TTD: 9-48

COLOR VII

Aging of textile materials. Construction and operation of accelerated aging cabinets. Dorothy S. Lyle, Pennsylvania State College. *Am. Dyestuff Reptr. 36,* No. 22, 623-28, 640 (Nov. 3, 1947).

The first report in a series on the accelerated aging of textile fabrics in controlled light-exposure tests describes the construction and standardization of aging cabinets which may be used in conjunction with the Fade-Ometer. The cabinets provide a suitable means of controlling aging conditions. The exposure of fabrics to light in different atmospheres is made possible, together with a combined application of light alternately with abrasion, washing, dry cleaning, etc. Fabric pieces 15″×4″ can be accommodated.
WPU,jr. TTD: 9-48

Cleaning acetate rayon. The effect of dry cleaning on cellulose acetate rayon. Anon. *Ciba Rev.* No. 69, 2549 (June, 1948).

Low temperature and the use of perchlorethylene are recommended for dry cleaning acetate rayon in order to prevent bleeding. TTD: 9-48

Cleaning acetate rayon. Fading of cellulose acetate by dry cleaning solvents. G. Sellier & M. Vandeputte. *Teintex 12,* No. 9, 290-3 (Sept. 15, 1947); *Chimie et Industrie 59,* No. 6, 586 (June, 1948).

Perchlorethylene is recommended instead of benzene for dry cleaning acetate fabrics since it causes less fading. TTD: 9-48

COLORING NYLON. Dyeing and printing of nylon. M. Fortuncta & C. Pieri. Editoriale Italiana, Milan; 1947; 123 pp.; price 350 L.

Reviewed in *Chimie et Industrie 59,* No. 5, 480 (May, 1948). TTD: 9-48

Bloodstained fabrics. Activation of solutions of hydrogen peroxide by hemoglobin. W. Kind. *Melliand Textilber. 28,* No. 8, 269 (Aug. 1947); *Chimie et Industrie 59,* No. 6, 586 (June, 1948).

Catalytic decomposition of H_2O_2 by hemoglobin caused by washing bloodstained fabrics in the presence of peroxide is avoided by first boiling the fabric. TTD: 9-48

Stripping. The stripping of dyed textiles by the use of

hydrosulfite compounds. J. Starkie. *J. Soc. Dyers Colourists 63,* No. 11, 340-43 (Nov. 1947).

Stripping of dyes with sodium hydrosulfite and the sulphoxylate-formaldehyde compounds has been found to give excellent results. The sodium hydrosulfite has reducing powers equal to the sulphoxylate-formaldehyde compounds, although less stable. Its reducing action takes place in the cold and is completed at ordinary temperatures. The sulphoxylates on the other hand, are quite stable at low temperatures, and must be heated almost to the boiling point to initiate the reducing action. Acetic, formic, or sulfuric acid may be added to accelerate the reducing action. Directions are given for stripping various materials with these compounds.
TTD: 9-48

Bleaching VII 1

Bleaching. Bleaching fibers. Solvay et Cie. French P. 918 044. Jan. 28, 1947. *Chimie et Industrie 59,* No. 6, 587 (June, 1948).

The crude fibers are plunged into an aqueous solution of chlorine with a pH below 3, then into an aqueous solution of hexametaphosphate or alkaline sulfamate to which Na_2CO_3 has been added to reduce the pH to 11. The fibers are again placed in an aqueous solution of chlorine at a pH below 3, and are finally dechlorinated with a solution of sodium bisulfite and sodium carbonate with a pH of 8.5. TTD: 9-48

Bleaching. Pilot-plant bleaching of cotton fabrics. J. H. Kettering & W. N. Berard, Southern Regional Research Laboratory. *Am. Dyestuff Reptr. 36,* No. 20, 552-4 (Oct. 6, 1947).

The portion of the Southern Regional Research Laboratory program on bleaching cotton fabrics which pertains to the development of a satisfactory pilot-plant method is reported. Physical and chemical analyses of fabrics taken at various stages of a pilot-plant procedure suitable for the kier boiling and bleaching of 100-200 pound lots of fabrics show that the fabrics meet present commercial standards. Formulas, liquor ratios, temperatures, description of the apparatus, and other information are given.
WPU,jr. TTD: 9-48

Bleaching. Bleaching agents and disinfectants. Bittner. I. G. Farbenindustrie, Zetko report. Enlargement print of Frames 1152-1156 of FIAT Microfilm Reel C 60, PB 176 57, Mar. 1933. 6 pp. PB L 639 69. *Bibl. Sci. Ind. Reports 5,* 570 (May 16, 1947). Price: $1.00 (Microfilm or Photostat); *in German.*

The experiments of the synthesis of chlorides of carboxylic acid amides and sulfonic acid amides to be used

as bleaching agents and disinfectants are described. The following products were prepared (1) urea chloride (2) formamide chloride (3) acetamide chloride (4) benzamide chloride (5) oxamide chloride (6) oxamethane chloride and (7) the chloride oxamic acid. Among the amides of sulfonic acid the amides of chloroethane sulfonic acid and ethane sulfamide were selected for chlorination. TTD: 9-48

Dyeing VII 2

Azo dyes. Process for coloring the fiber with azo dyes which are insoluble in water. Schimmelschmidt & Schneider. I. G. Farbenindustrie A. G. Ger. P. 708 380, July 19, 1941. 2 pp. *Bibl. Sci. Ind. Reports 5,* 530 (May 9, 1947). TTD: 9-48

Batik dyeing. Batik styles on wool, nylon and other materials. R. Casty. *Ciba Rev.* No. 66, 2415-16 (Apr. 1948).

For batik dyeing, a resist must be employed which withstands dyeing at higher temperatures, such as 160°C. A highly chlorinated naphthalene wax is recommended. TTD: 9-48

Color analysis. New applications of colour measurement in the dyeing of wool. H. J. Selling. *J. Soc. Dyers Colourists 63,* No. 12, 419-24 (Dec. 1947).

An investigation was made of the possibility of analyzing the amount of acid dyes on woolen fabrics in a manner similar to that used for analyzing dyes in solution. The matching of known dyes to approximate a sample containing unknown dyes was investigated also. It was found that approximations by the spectrophotometer were much better than the visual estimates by experienced dyers. TTD: 9-48

Dyehouse control. Elements of dyehouse control. E. A. Leonard, Alexander Smith & Sons Carpet Co. *Textile Age 12,* No. 5, 7, 10-12, 16, 20, 22, 26, (May, 1948).

The elements in the operation of a dyehouse for the combination of raw materials into a finished product are discussed in detail. These elements consist of: control of incoming materials; control of the dyeing process, the technical phase, including times, temperatures, etc.; control of color. TTD: 9-48

Dyeing. The application of dyeing theory to dyeing practice. E. B. Abbot, H. Crook, & F. Townsend. *J. Soc. Dyers Colourists 63,* No. 12, 462-68 (Dec., 1947).

Under the headings of nylon, wool, and cellulose, the relation of dyeing theory to dyeing practice is reviewed. TTD: 9-48

Dyeing. Cake dyeing of viscose rayon. J. A. Woodruff, Am. Viscose Co. *Am. Dyestuff Reptr. 36,* No. 20, 549-51, 572-3 (Oct. 6, 1947).

Viscose rayon yarn is generally manufactured by the cake process, and rewound into skeins for ease in dyeing. Dyeing the yarn in the form of cakes eliminates one or 2 winding operations, and yarn so dyed should be in a better condition for further processing than that obtained from skein-dyed yarn. Cake dyeing has lacked general acceptance due to a lack of proper machinery and knowledge of dyeing technique and an absence of cakes especially designed for dyeing. This paper discusses the development of machinery for cake dyeing, procedures for dyeing, factors concerned with flow of dye liquor and levelness of dyeing, and finishing, extraction, and drying of dyed cakes.
WPU,jr. TTD: 9-48

Dyeing. Dyeing: a comparison between the changes in German and American practice. R. G. Fargher. *J. Soc. Dyers Colourists 63,* No. 12, 425-29 (Dec., 1947).

Labor problems in the two countries are reflected in their approaches to new methods. Refinements to existing machines form the major contribution of German technology. Reducing and controlling processing tensions in order to avoid the need for compressive shrinkage is a general objective. The American contribution is directed toward continuity of processing with little regard to the control of tension. The impact of chemical engineering on the design of finishing machinery is only now beginning to be felt. Technical development has exceeded basic knowledge on which the new processes are based. Need for more basic knowledge is evident at many points. TTD: 9-48

Dyeing. The dyeing industry from a mechanical viewpoint. W. Allen Traver, Franklin Process Co. *Am. Dyestuff Reptr. 37,* No. 9, 307-09 (May 3, 1948).

A non-technical address reviews some of the problems which dyeing machinery manufacturers must continually work to solve. Full-scale testing of new machines or improved old ones, some ways in which earlier dyeing machines have contributed to poor dyeings, and the necessity for intelligent operation of the new higher speed machines are among the topics discussed.
WPU,jr. TTD: 9-48

Dyeing. The effect of electrical charge in the application of dyestuffs. R. I. Section, AATCC. *Am. Dyestuff Reptr. 36,* No. 24, 697-704 (Dec. 1, 1947).

A survey is made of several hundred dyeing experiments on cotton and wool fibers, in which numerous direct, acid, and vat colors were used. The experiments were car-

ried out under varying conditions of temperature, pH, electrical potential and current, with several types and concentrations of electrolytes, and also with different types of dispersing agents. The chemical effects were the most important produced by the electric current and it was found that electrophoresis played a minor part, or none at all. When electrical current did affect the dyeing properties, this was largely due to changes in pH, caused by electrolysis of the dyebath in the vicinity of one of the electrodes. Certain dispersing agents had a material affect, especially for the vat color pigments.
WPU,jr. TTD: 9-48

Dyeing. The fast coloration of cellulose acetate rayon, with particular reference to shades of good fastness to scouring. A. Mellor & H. C. Olpin. *J. Soc. Dyers Colourists 63,* No. 12, 396-400 (Dec., 1947).

Azoic and indigoid vat dyes on cellulose acetate rayon are fast to wet processing and give shades more suited to effect threads and mixtures than to materials requiring more exact matching of shades. Dispersed dyes are preferred for the latter type work, but lose depth and stain on to white during severe scouring and other wet processes. Dyeing of cellulose acetate rayon may be speeded up by the use of organic solvents in suitable dilution. Dyes which normally have little or no affinity for cellulose acetate rayon may be applied by this method because the organic solvents produce swelling of the fibers permitting and assisting dye absorption. Shades thus obtained are said to be of exceptional fastness to water and scouring. Acetic or formic acid may be used as a swelling agent for the application of aniline black by the copper method. TTD: 9-48

Dyeing. The measurement of the affinity of monobasic acid dyes for wool. D. R. Lemin & T. Vickerstaff. *J. Soc. Dyers Colourists 63,* No. 12, 405-11 (Dec. 1947).

The authors define affinity as the difference in the chemical potential of the dye in its standard state in solution and in its standard state in the fiber. By means of equations, affinity can be determined from equilibrium measurements of (1) the adsorption of free dye acids by wool, (2) the displacement of dye anions from dyed wool by inorganic anions, and (3) competition between dyes for dye sites in wool fiber. The equations developed for the three methods were shown to be valid over a number of pH, dye, and salt concentrations. Affinity values for the dyes studied by the three methods were consistent. TTD: 9-48

Dyeing. Modern American dyeing practice. H. F. Clapham. *J. Soc. Dyers Colourists 63,* No. 12, 469-72 (Dec., 1947).

Increased production and better quality are being emphasized in the United States. Descriptions of new machines and processes for dyeing cotton, wool and synthetic fibers are given. TTD: 9-48

Dyeing. Package dyeing of yarns. Herman J. Jordan, Jr., Wiscassett Mills. *Am. Dyestuff Reptr. 37,* No. 9, 304-06 (May 3, 1948).

The process of package dyeing is discussed, with particular emphasis upon the preparation of cotton yarns for dyeing, the type of machine used, factors influencing dyeing, and the methods used with various classes of dyes.
WPU,jr. TTD: 9-48

Dyeing. Process for dyeing fibrous material of animal origin, or cellulose fibers and mixtures thereof, or fittings made of vulcanized fibers with azo which are soluble in water. Zitscher. I. G. Farbenindustrie A. G. Ger. P. 713 407, Nov. 13, 1941. 4 pp. Addition to patent 705 775. *Bibl. Sci. Ind. Reports 5,* 530 (May 9, 1947). TTD: 9-48

Dyeing. Process for the dyeing with acidic wool dyes of animalized fibers or shapes from regenerated cellulose or cellulose derivatives or of mixtures thereof which may contain wool. Tischbein. I. G. Farbenindustrie A. G. Ger. P. 714 789, Dec. 6, 1941. 5 pp. *Bibl. Sci. Ind. Reports 5,* 528 (May 9, 1947). TTD: 9-48

Dyeing. Recent developments in dyeing practice. E. B. Abbot. *Textielwezen 3,* 45-7 (Dec. 1947).

An attempt is made to discern the underlying principles which have led the technologists to make significant progress. The greater attention now being paid by dyeing technologists to mechanical developments in dyeing practice is noted. TTD: 9-48

Dyeing. Some aspects of the electro-chemistry of dyeing. S. M. Neale. *J. Soc. Dyers Colourists 63,* No. 12, 368-71 (Dec. 1947).

This is an attempt to provide a simple picture of the effect of electrical forces in the dyeing process. The progress of research in this field is also outlined. TTD: 9-48

Dyeing and finishing hosiery. Shrinkproofing, dyeing, and finishing men's hosiery of wool and nylon blends. V. T. Hartquist. *Textile Age 12,* No. 4, 7, 10, 14, 18, 22 (Apr. 1948).

A review of the various methods and factors in shrinkproofing wool for hosiery. Blends of wool and a high percentage of nylon can be termed absolutely shrinkproof. Problems in dyeing wool and wool-nylon blends and suggestions for handling them are discussed. TTD: 9-48

Dyeing defects. Warp stripiness in rayon fabrics. Anon. *Ciba Rev.* No. 63, 2315-16 (Jan. 1948).

Methods of determining the stripiness of warp are discussed. In the case of stripiness due to differences in dyeing affinity, certain direct dyestuffs are recommended. TTD: 9-48

Dyeing hosiery. Color trouble in nylon hosiery. J. L. Wauters. *Knitter 12,* No. 1, 26 (Jan. 1948).

Unevenness and variations in dyeing nylon hosiery can be traced to improper preparation of the hosiery before dyeing, particularly to the incomplete removal of yarn coating (size) during scouring because the emulsification value of the scour bath is insufficient for the work it is required to do. The author recommends use of a sufficient quantity of any good scour to prevent the emulsion from breaking. TTD: 9-48

Dyeing nylon. The combination of acid dyes with amine and amide groups in nylon fibre. P. W. Carlene, A. S. Fern, & T. Vickerstaff. *J. Soc. Dyers Colourists 63,* No. 12, 388-93 (Dec. 1947).

The tendering effect of certain acid dyes at high concentrations has been observed on nylon. Selected acid dyes, dispersed cellulose acetate rayon dyes, and Solacet dyes have been applied to undrawn rayon monofil over a range of dye concentrations and the tensile characteristics of the dyed monofil measured. With the majority of acid and Solacet dyes (applied from acid baths) a sharp drop in breaking load and extension occurred when the amine groups became saturated and attachment of the dyes to amine groups began. The acetate and Solacet dyes, applied from neutral baths at comparable concentrations caused no such degradation. A theory is advanced to account for these observations.

TTD: 9-48

Dyeing viscose rayon. Dyeing viscose rayon with vat dyes; with particular reference to rayon staple. John Boulton, Courtaulds, Ltd. *Papers Am. Assoc. Textile Technologists 3,* No. 3, 117-29 (June, 1948).

A brief account of current yarn dyeing practice, with emphasis on new and novel aspects, is given. The topics discussed are: direct dyes, vat dyes, leuco vat dyeing, restraining agents, pigment pad methods, dyeing of vat fawn on the Courtauld machine, dyeing of vat blues, use of solvents in vat dyeing, sulfur dyes, methods of viscose rayon staple dyeing, "Fibro" packages or mock-cakes, winding spun rayon yarns into cakes for dyeing, warps, uncut tow, greenfield top, oxidation of vat dyes on viscose rayon staple, indigoid dyes, "Fibrofix," and spun-dyed "Fibro." TTD: 9-48

Dyeing viscose rayon. Some factors affecting the dyeing of viscose rayon. Part I—Preliminary Survey. J. M. Preston & P. Pal. *J. Soc. Dyers Colourists 63,* No. 12, 430-34 (Dec., 1947). Part II—The Effect of Orientation. J. M. Preston & A. H. Kapadia. *Ibid.,* 434-38.

Part I. It was found that effect of filament denier, length of immersion, effect of stretch, and effect of ripeness, all produced marked changes in the dyeing properties of viscose rayon, even for small changes in their values. The latent strain did not affect dyeing, provided it did not exceed about 2%. Part II. The rate of dyeing and the equilibrium dye uptake are both affected by orientation of the cellulose molecules in viscose rayon fibers.

TTD: 9-48

Dyes. Quinoline derivatives as fur dyes. Lehmann. I. G. Farbenindustrie, Zetko report. Enlargement print of Frames 1106-1109 of FIAT Microfilm Reel C 60, PB 176 57, Mar. 1933. 4 pp. PB L 639 58. *Bibl. Sci. Ind. Reports 5,* 569 (May 16, 1947). Price: $1.00 (Microfilm or Photostat); *in German.*

Various derivatives of quinoline were examined for their applicability as fur dyes. Although well suited in some respects, they lacked uniformity in dyeing.

TTD: 9-48

Dyevat control. Industrial dyevat control. F. Blezzard. *J. Soc. Dyers Colourists 63,* No. 12, 439-45 (Dec., 1947).

The control of dyebath temperatures by modern regulators is discussed. Details of performance are given and the advantages of their applications are pointed out.

TTD: 9-48

Fading. Protection of light-fastness by olive green indanthrene B. J. Müller. *Melliand Textilber. 28,* No. 10, 353-8 (Oct. 1947); *Chimie et Industrie 59,* No. 6, 587 (June, 1948).

Olive green indanthrene B was found to have a protective action toward dyes which were very sensitive to light. An attempt has been made to establish a relationship between light-fastness and fiber deterioration.

Fluorescent dyes. Selection and use of fluorescent dyes on textile materials. Rick Mansell. *Textile Age 12,* No. 6, 7, 10-11, 14, 18, 20, 24 (June, 1948).

The properties and selection of suitable fluorescent dye for textile materials are discussed and the uses of these fluorescent-dyed materials are reviewed. Dyeing and painting with fluorescent dyes and their application to wool and to nylon are also considered. TTD: 9-48

Fur dyes. Recent investigations in the field of fur dyes. Lehmann. I. G. Farbenindustrie, Zetko report.

Enlargement print of Frames 1752-1762 of FIAT Microfilm Reel C 60, PB 176 57, Apr. 1934. 11 pp. PB L 640 77. *Bibl. Sci. Ind. Reports 5,* 581 (May 16, 1947). Price: $1.00 (Microfilm or Photostat); *in German.*

It was found that the salts formed by dihydroxynaphthalenes with amines have properties which are very desirable for fur dyes, but they are almost insoluble in water. This difficulty is overcome by using emulsions of the finely ground salts with suitable emulsifiers. A large number of compounds were tested. The products obtained were excellent for sheep fur but could not be used for the whiskerlike hair of rabbits and other animals. The testing of their properties was not finished, but in most respects they appeared superior to the ursols previously used exclusively, particularly in the blue and brown dyes. A black was developed by combination of a blue, brown, and yellow, claimed to be superior to logwood black. Its composition is given. TTD: 9-48

Improved metachrome dyeings. Metachrome dyeing with cationic and non-ionic agents. Henry E. Millson & Geo. L. Royer (to Am. Cyanamid Co.). USP 2 443 166, June 8, 1948.

Greatly improved or complete penetration and levelness of normally non-penetrating metallizable dyes are effected, especially on wool or other basic fibers, by modifying the metachrome dyeing process through addition of a cationic surface-active agent, especially an alkylol higher alkyl guanidine salt, together with a non-ionic surface-active agent prepared from a polyglycol and one of the following: an aliphatic alcohol, aliphatic acid, or alkyl-substituted phenol.
MC TTD: 9-48

Light fastness. The action of light on dyed and undyed cotton. G. S. Egerton. *Am. Dyestuff Reptr. 20,* 561-70, 573 (Oct. 6, 1947).

(See TTD: *4,* 502). TTD: 9-48

Nylon dyeing. Nylon dyeing. Harry Clapham, E. I. du Pont de Nemours & Co. *Am. Dyestuff Reptr. 37,* No. 9, 299-301 (May 3, 1948).

Current recommendations are given for the dyeing of nylon. Dyeing of hosiery, piece goods, and nylon-wool blends are among the topics discussed.
WPU,jr. TTD: 9-48

Package dyeing. The influence of liquor flow rate in package dyeing. W. Armfield. *J. Soc. Dyers Colourists 63,* No. 12, 381-85 (Dec., 1947).

An apparatus for showing the effect of rate of flow of dye liquor through a viscose rayon package and a method for determining the levelness of a dyed package are described. Levelness is expressed as a decimal fraction

of 1, which represents complete evenness of dye distribution along the length of the package. By comparing the relationship between rate of flow and the levelness factor for individual dyes, direct dyes may be classified by means of this apparatus. For a given set of dyeing conditions, the levelness of a dyed package may be increased by increasing the rate of flow of the dye liquor. Increasing the rate of flow is equivalent to lowering the salt sensitivity of the dyes. TTD: 9-48

Pigment dyes. The precipitation of basic dyes with modified hydrous zirconia. Warren B. Blumenthal, Titanium Alloy Mfg. Co. *Am. Dyestuff Reptr. 37,* No. 9, 285-6 (May 3, 1948).

Hydrous zirconia was treated with various anions which combined with it to form electronegatively charged zirconate micelles. These micelles were found to precipitate basic dyes, forming insoluble complex substances. On properly preparing these precipitates, new pigments of useful properties were obtained.
WPU, jr. TTD: 9-48

Printing agents. Process for the dyeing of fibrous materials with the help of mordanting and resist printing agents from phenols. Zerweck & Pässler. I. G. Farbenindustrie A. G. Ger. P. *729 287,* Dec. 15, 1942. 2 pp. *Bibl. Sci. Ind. Reports 5,* 528 (May 9, 1947). TTD: 9-48

Pyrophosphate in dyeing. Protective action of sodium pyrophosphate during the course of dyeing in the presence of iron. P. Rabe. *Melliand Textilber. 28,* No. 10, 352-3 (Oct. 1947); *Chimie et Industrie 59,* No. 6, 586-7 (June, 1948).

A large number of phosphates, particularly acid phosphates of the series $Na_2H_2P_2O_7$, hinder the action of iron salts on dyes. The use of sodium pyrophosphate is recommended when dyeing is carried out in iron apparatus or when water containing small quantities of the metal is used. TTD: 9-48

Tendering. Tendering of vat dyed textile materials on exposure to light. H. A. Turner. *J. Soc. Dyers Colourists 63,* No. 12, 372-80 (Dec. 1947).

Developments of the past fourteen years are reviewed with a view toward pointing out gaps in the experimental investigation of vat dyes on fibers. Reliable spectrographic data are especially needed. References are given to work in other fields which might be extended to vat dye systems. TTD: 9-48

DYES AND DYEING. Eltore Rizzini. Hoepli, Milan; 1948; 409 pp.; price L 2000.

Reviewed in *La Chimica e L'Industria 30,* No. 4, 128 (Apr. 1948). TTD: 9-48

Printing VII 3

Printing aid. Direct printing with substantive dyes. E. A. Krahenbuhl. *Ciba Rev.* No. 67, 2469-70 (May, 1948).

The action of sodium phosphate, which is usually added to printing colors, is discussed, but no scientific explanation of its favorable effect is advanced. TTD: 9-48

Printing black effects. Some notes on blacks for textile printing. J. H. Downey. *Textile Age 12,* No. 3, 52-54, 59-60 (Mar. 1948).

A discussion of 5 main points in printing black effects on textiles: density, sharpness of printed impressions, freedom from painting faults, risk of soiling of eight colored print pastes, and ribbing and marking-off in wet processing. Some methods of overcoming faults in printing blacks are described. TTD: 9-48

Screen printing. A new method for fixing the goods on the screen printing table. Anon. *Ciba Rev.* No. 65, 2387-88 (Mar. 1948).

The method of fixing fabrics to the screen printing table by means of adhesive wax is described. This method may be used for fixing all types of materials, including knitted material and plastic sheets. TTD: 9-48

Screen printing. Some suggestions for making screens for textile printing. J. H. Downey. *Textile Age 12,* No. 1, 62, 64, 66, 68, 72, 74 (Jan. 1948).

The screen used in textile printing is described. Methods of avoiding errors where repeats are used and the registration of patterns in screen printing are also discussed. TTD: 9-48

Measurements and defects VII 4

Gas fading of dyes. Evaluation of uncontrolled gas fading equipment. Frances K. Ray, Pauline B. Mack & Arthur H. Wachter, Penn. State College & Am. Viscose Co. *Am. Dyestuff Reptr. 37,* No. 9 287-89 (May 3, 1948).

Wide variation (up to 100%) was found in the time required for one gas-fading test period (AATCC method) in a series of tests with the use of one of the current types of equipment. Possible causes for the variation were uncontrollable or only partially controlled fluctuations in temperature, humidity, gas consumption, quality of gas, and in the gas combustion. The extent of variations in the length of time of the test period indicates the desirability of controllable equipment for gas-fading observations.
WPU, jr. TTD: 9-48

PROOFING VIII

Creaseproofing. Creaseproof finishing. Brodersen. I. G. Farbenindustrie, Zetko report. Enlargement print of Frames 1776-1779 of FIAT Microfilm Reel C 60, PB 176 57, Mar. 1934. 4 pp. PB L 640 81. *Bibl. Sci. Ind. Reports 5,* 582 (May 16, 1947). Price: $1.00 (Microfilm or Photostat); *in German.*

The most promising method was impregnation with a .5% solution of urea and subsequent treatment with formaldehyde vapor at 120° C. Some damage to the fiber, however, could not entirely be eliminated. Also tested were compounds splitting off formaldehyde when heated. Dimethylol urea had to be applied in a solution of 15-20%. Dicyandiamide gave good results with formaldehyde vapor. TTD: 9-48

Deterioration of cellulose. Does copper naphthenate oxidize cellulose? A. E. Bartlett & Milton Goll, Nuodex Products Co., Inc. Tropical Deterioration Information Center Report 9, Sept. 1944. 14 pp. Price: $1.00 (Microfilm or Photostat). *Bibl. Sci. Ind. Reports 5,* 481 (May 9, 1947).

Tests were carried out on 10 oz. cotton duck, cotton twine and on jute roving. In addition to copper naphthanate, cordex, a proprietary product containing copper naphthanate, and a cordage lubricant were also used in the tests. Linseed oil as an additive was checked. The action of organic copper salts vs. inorganic copper salts was checked by including copper sulfate in the series. Records of the influence of oxygen and ultra-violet light are given in tables. While copper sulfate appears to hasten the oxidation of cellulose, copper naphthanate does not do so, and the combination with other materials which contribute beneficial mechanical effects, actually protects against oxidation as well as against microbial attack. TTD: 9-48

Insecticide. Toxicity of gamma-benzene hexachloride in clothing. R. G. Horton, L. Karel & L. E. Chadwick. *Science 107,* No. 2775, 246-47 (Mar. 5, 1948).

The gamma isomer of hexachlorocyclohexane, insecticide and miticide clothing impregnate, was found to be extremely hazardous to some mammals. It is probable that it can be used safely as an impregnate only at concentrations too low to be effective. TTD: 9-48

Textile shrinkage control. Treatment of textile materials with aldehydes. Mark Weisberg, Archibald S. Stevenson & Leo Beer (to Alrose Chemical Co.). USP 2 441 859, May 18, 1948.

Reduction of shrinkage in textile materials without loss of tensile strength or of abrasion resistance, is obtained

by an aqueous non-acidic treatment with an aldehydic type of compound, e.g., formaldehyde or hexamethylene tetramine, followed by drying and subsequent steaming in the presence of an acid at 212-220° F. Steam-volatile organic acids are preferred.

MC TTD: 9-48

Vinyl resin coating. Ultrasol. Anon. *Monsanto Mag. 27,* No. 3, 30 (June, 1948).

Ultrasol is a new coating used in conjunction with properly treated paper or fabrics to render them resistant to water, stains, and flame. Upholstery of porch and lawn furniture, in automobiles, restaurants, theaters, and the like may be given either a smooth, colorful finish or a decorative leather-like effect with the new coating.

TTD: 9-48

Waterproofing. Study on waterproof dope (report no. 2) waterproof top coating. Yukihiko Inouye & Nobutaka Honda. Japan Automobile Corp. May, 1934. 11 pp. PB L 710 59. *Bibl. Sci. Ind. Reports 5,* 471 (May 9, 1947). Price: $1.00 (Microfilm); $1.50 (Enlargement Print); *in Japanese.*

It was found that by using benzyl acetate dope as a top coating, the water resistance of cellulose acetate fabric dope was improved to the extent that it compared with nitrocellulose dope. TTD: 9-48

TESTING AND ANALYSIS IX

Conditioning wool. Considerations on conditioning wool. G. Saive. *Textielwezen 3,* 39-40 (Nov. 1947); *in French.*

The changes in the weight of wool with the relative humidity are discussed and the need for conditioning before weighing is pointed out. TTD: 9-48

Electric hygrometer. Application of the electric hygrometer to the determination of water vapor permeability at low temperatures. J. A. Van den Akker, Inst. of Paper Chemistry. *Paper Trade J. 126,* No. 1, 32-7 (Jan. 1, 1948).

Measurement of small water vapor permeability at low temperature is made possible by a special electric hygrometer having very small moisture absorption capacities. The hygrometer and its circuit are described. The dynamic method, the comparison method, and the sweep-gas method of determination of water vapor permeability at low temperature by means of the hygrometer are described and discussed. TTD: 9-48

Fabric testing. Present test methods inadequate. D. H. Powers, Monsanto Chemical Co. *Fibre & Fabric 100,* No. 3270, 12 (Oct. 4, 1947).

A discussion of the inadequacies of present methods of testing fabrics, especially as such tests apply to measuring crease-resistance and crease-recovery properties of fabrics. Recent research indicates that better methods can be evolved. The author cites an example of successful applied research into the properties of fabrics when, at the request of the U. S. Army Quartermaster Corps, a simple, successful test was developed to test the shrinkage-resistance qualities in woolen socks.

TTD: 9-48

Moisture determination. Moisture testing of baled straw by electronic methods. Norval F. Wilson, Alton Box Board Co. *Paper Trade J. 126,* No. 3, 55-6 (Jan. 15, 1948).

The electrical resistance of baled straw is shown to be a logarithmic function of the moisture content between 10 and 28% moisture. Above 28%, the line has a greater slope, up to 50%. Diagrams of electrical circuits are given for (1) an instrument designed to measure direct conductivity in the range 20-50% moisture, (2) for the low moisture range, using a radio tube to amplify the current and a neon tube as the null instrument, and (3) using a meter in place of the neon tube. The development of this specialized equipment was sponsored by the TAPPI Agricultural Residues committee. TTD: 9-48

Moisture determination. Rapid estimation of moisture of straw in bales. S. I. Aronovsky & H. M. Sutcliffe. *Paper Trade J. 126,* No. 3, 51-4 (Jan. 15, 1948).

The Delmhorst instrument, which determines the amount of moisture in straw by measuring its electrical resistance, was adapted. Moisture content up to 25% was determined satisfactorily by the apparatus; beyond 25% it indicated only that the straw was slightly or extremely wet. TTD: 9-48

Sample dryer. Forced draft dryer. Anon. *Textile Industries 112,* No. 1, 147-48 (Jan. 1948).

A rapid and accurate method for drying fibers for moisture determinations has been developed by Baird Associates, Inc., Cambridge, Mass., in cooperation with the U. S. Customs Department. Features of the Baird dryer are: 4 heating chambers with separate pumps and heating units, temperture control allowing temperatures from 70° C to 170° C, and drying of samples of yarn up to 150 grams in about 5 minutes. TTD: 9-48

Testing. Testing as an aid to efficiency in finishing. E. G. H. Carter. *J. Soc. Dyers Colourists 63,* No. 11, 337-40 (Nov. 1947).

The difficulties connected with the selection of a representative sample of the product, and those arising from the variable results given by testing methods when ap-

plied to identical samples are illustrated by actual problems encountered by the author. TTD: 9-48

Weathering of textiles. Weather protective treatments for cotton duck. Southeastern Section, AATCC. *Am. Dyestuff Reptr. 36,* No. 24, 705-10 (Dec. 1, 1947).

Certain pigment and resin finishes, designed primarily for application to awning duck fabrics, were evaluated for their ability to extend effectively the service life of cotton fabrics when exposed to weathering conditions. Deterioration in appearance and strength is due chiefly to exposure to sunlight and to biological attack. Urea-formaldehyde resin used alone had definite weather-protective properties for cotton, and was even more effective when combined with pigments. Pigments bound with oil-modified alkyd resin were also effective. The various treatments showed the same order of effectiveness when the samples were exposed outdoors or only to sunlight. Use of a carbon-arc weathering machine was of aid in classifying the ultraviolet light-screening properties of the various treatments, but did not give a definite correlation with the results of outdoor exposure.
WPU, jr. TTD: 9-48

Physical properties IX 1

Abrading machine. Wm. De Young and Eric C. Weathered. USP 2 437 245, Mar. 9, 1948.

The abrading wheels of this abrasion testing machine are angularly and linearly adjustable with respect to the work.
JHB TTD: 9-48

Drape measurement. A new simplified form of the drapemeter. J. H. Skinkle & A. J. Moreau, Lowell Textile Institute. *Am. Dyestuff Reptr. 36,* No. 20, 559-60 (Oct. 6, 1947).

An instrument has been devised for the measurement of "drape" or "handle" of cloth, by means of which much time may be saved in routine testing over the older Drapemeter method. The rectangular sample is folded back on itself at one end, and the fold held in a clamp; measurement is then made of the chord length of the concave side of the fabric at a standard distance below the place where the fold of the cloth is held by the clamp.
WPU, jr. TTD: 9-48

Light-stability measurements. Textile fading lamps controlled with new light-sensitive papers. Anon. *Textile Age 12,* No. 66, 68-70 (June, 1948).

Arc lamps are used to test the light-stability of materials but do not give reproducible results. Performance of these fading lamps may be controlled by the use of special light-sensitive paper which, when placed in the lamp with materials being tested, will fade to an end-point that can be visually matched with a standard. TTD: 9-48

Testing. Resiliency and stiffness measurements. Anon. *Fibres 8,* No. 12, 428 (Dec. 1947).

A method for making sensitive measurements of resiliency and stiffness of fabrics is described briefly. The automatic balance of the Sookne-Harris Fiber Extensometer may be used as a compressometer. The method is applicable to very light or limp fabrics, including knit goods. TTD: 9-48

1947 Supplements to ASTM Standards. 5 parts. Am. Soc. for Testing Materials, Philadelphia. Price: $4.00 per part or all 5 parts $20.00. Part 3-A on non-metallic materials, includes textiles.

Reviewed in *Am. Machinist 92,* No. 16, 160 (July 29, 1948). TTD: 9-48

Chemical analysis IX 2

Analysis. The estimation of diazo-compounds through decomposition by light. G. Spencer & T. J. Taylor. *J. Soc. Dyers Colourists 63,* No. 12, 394-95 (Dec. 1947).

The diazo-compounds 1-diazo-2-naphthol-4-sulphonic acid and its 6-nitro derivative cannot be estimated accurately by the ordinary coupling method. The authors describe a semi-micro apparatus and method for determining these compounds. A carbon arc lamp is used to effect decomposition and the nitrogen evolved is then measured. This work was based on that of Schmidt and Maier, in 1931, who used sunlight instead of the carbon arc lamp. TTD: 9-48

Analytical Methods. Chemical analysis applied to the textile and dyeing industry. I. Textile analysis. A. Algerino. Ulrico Hoepli, editor, Milan; 1948; 326 pp.; price 1500 L.

Reviewed in *Chimie et Industrie 59,* No. 5, 481 (May, 1948). TTD: 9-48

Dye identification. A new reagent for the identification of vat dyes: acidified potassium permanganate. D. A. Derrett-Smith & B. C. Gee. *J. Soc. Dyers Colourists 63,* No. 12, 401-04 (Dec., 1947).

This paper is an extension of an earlier work by H. B. Bradley and D. A. Derrett-Smith entitled, "The Identification of Vat Dyes on Linen and Cotton Materials (including the determination of the dyeing class of all dyes commonly found on such materials)", (*J. Soc. Dyers Colourists 56,* No. 3, 97-121 (March, 1940)). This

work gave tables of characteristics for the identification of all available British, German, and Swiss vat dyes. The reagents used were alkaline hydrosulfite, acid hydrosulfite, sulfuric acid, and nitric acid. The present work describes tests using acidified potassium permanganate solution followed by an acidified solution of hydrogen peroxide. The new test provides a means of distinguishing between certain dyes more positively than the earlier tests, and in many cases can be used as a confirmatory test. TTD: 9-48

TEXTILE MILLS X

Southern textiles. Textile manufacture continues as second southern industry. Caldwell R. Walker. *Mfrs'. Record 117,* No. 7, 32, 49 (July, 1948).

This is the second article in a series discussing the growth of the southern textile industry. The value of the output for the first quarter of 1948 was 1554.9 million dollars. Employment was given to an average of 662,270 persons. Seventy-nine per cent of all spindles in the country are located in the south. The details of textile manufacture listed by states for the first quarter 1947, is given.

LCL TTD: 9-48

Water. Some aspects of the requirements for the quality of water for industrial uses. S. T. Powell. *J. Am. Waterworks Assoc. 40,* No. 1, 8-23 (Jan. 1948).

The use of water in paper and textile manufacturing is discussed, together with other uses. Examples are given of the effect of hard water on textile processing. TTD: 9-48

Buildings, machinery, power X 1

New machinery. New machinery introduced at textile equipment show. Anon. *Textile Age 12,* No. 5, 78 (May, 1948).

A brief description of some of the new machinery shown at the International Exposition of Textile Machinery. TTD: 9-48

Lighting and air X 2

Air conditioning. Air conditioning yields over 90% efficiency in rayon weaving plant. Geo. E. Ladd. *Textile Age 12,* No. 4, 54-55, 58, 63-64 (Apr. 1948).

A description of an air conditioning system (at McGinley Mills) with details of the air intakes, distribution ducts, damper control, feed water, and pump drive. TTD: 9-48

Glass blocks. Glass blocks are important in air conditioning control. George Ransom. *Textile Age 12,* No. 3, 84, 86, 88-90 (Mar. 1948).

Glass blocks, used in mill windows, give improved natural lighting, reduce condensation on the inner surface of the glass, aid in temperature and humidity control and air cleaning, and reduce maintenance costs. They also damper the transmission of noise. In addition, where it is not necessary to transmit light, they may be used for heat insulation. TTD: 9-48

Humidifier filter. Filter-protected humidifier. Anon. *Textile Industries 112,* No. 1, 147 (Jan. 1948).

A spun glass filter which makes their humidifier lint and dustproof has been announced by Walton Laboratories, Inc., Irvington, N. J. The unit vaporizes more than a gallon of water per hour and is suspended from the ceiling. The filter may be easily removed for cleaning, or vacuumed while in place. TTD: 9-48

Humidifier water. Purification of humidifier water. Jas. W. Hammond, Humble Oil & Refining Co., & J. D. Lesslie, Springs Cotton Mills. *Textile Industries 112,* No. 1, 68-70 (Jan. 1948).

The bacteriological content of air and water in humidifying systems was investigated. It was found that chlorinated water greatly reduced the amount of bacteria present in the humidified air. Untreated water also caused stoppage of humidifier heads, which trouble was eliminated by chlorination with a resultant reduction in labor for maintenance. TTD: 9-48

Hazards; operations; efficiency X 4

Electronics. Electronics can help the textile industry. Ralph V. Coles. *Fibres, Fabrics & Cordage 14,* No. 11, 472-73 (Nov. 1947).

Among the electronic devices of value to the textile industry discussed are the electronic hygrometer, designed for the determination of moisture in textiles; the impregnation comparator, which enables the operator to adjust mangle pressure to give even impregnation in dyeing and finishing, and devices involving the use of the photoelectric cell. It is suggested that the textile industry should cooperate with electronic engineers to investigate the numerous possibilities and to insure that scientific methods are used in their application. TTD: 9-48

Materials handling. Safety factors in materials handling. C. S. Link, Jr., Avondale Mills. *Textile Industries 112,* No. 1, 71 (Jan. 1948). (Abstract of a paper presented at Natl. Safety Congress, Chicago, Ill.).

The reduction of safety hazards and the increase of

efficiency through installation of a number of materials handling devices is discussed. TTD: 9-48

Statistics. Statistical quality control. D. S. Hamby. *Textile Industries 112,* No. 1, 85-7 (Jan. 1948).

The normal, binomial, and poisson type distributions are discussed with reference to the collection and analysis of data pertaining to quality control in fabric production. TTD: 9-48

Water. Settling characteristics of suspensions in water treatment processes. A. A. Kalinske. *J. Am. Waterworks Assn. 40,* No. 2, 113-20 (Feb., 1948).

Water softening and clarifying units, properly operated and designed, require accurate knowledge of settling characteristics of various types of solid-liquid mixtures and suspensions. Especially is this true of modern types of slurry pool and sludge blanket equipment. The author presents some basic information and indicates its application to design. Scarcity of available data and need for further investigation is indicated. TTD: 9-48

Water supply. Effect of DDT spray on reservoir biological balance. M. S. Shane. *J. Am. Waterworks Assn. 40,* No. 3, 333-36 (Mar. 1948).

The effect of DDT spraying by airplane on a filtered water reservoir at Wilmington, Del., is discussed. Evidence compiled indicates that DDT spraying may cause a biological unbalancing of a reservoir as a result of DDT's toxic effects on microscopic organisms such as ameba, mastigophora, infusoria, and rotifera. TTD: 9-48

BASIC SCIENCES XI

Polymers. The size and shape of polymer molecules. C. E. H. Bawn, Univ. of Bristol. *Research 1,* No. 8, 343-52 (May, 1948).

Properties of a polymeric system cannot be defined completely by the chemical structure and average molecular weight because differences in molecular size distribution affect the mechanical and electrical properties. Molecular weight determines the ability of polymers to form strong, tough fibers or films, whereas flexibility or workability are dependent also on molecular weight distribution. The various methods developed for the study of distribution of molecular sizes and shapes of the molecules are reviewed. Osmotic pressure, cryoscopic methods, light scattering measurements, end group determinations, sedimentation and diffusion, and viscosity and particle shape are discussed. TTD: 9-48

Sedimentation. Some remarks on the effect of concentration and polydispersion on sedimentation by ultracentrifugation. Per-Olof Kinell. *J. Chim. Phys. 44,* Nos. 4-5, 53-7 (Apr.-May 1947).

It has been shown that, for monodispersed substances whose sedimentation constants depend on the concentration, the uniform decrease in concentration after ultra-centrifugation is greater than that for substances whose sedimentation constants are independent of the concentration. The value of the sedimentation constant increases with the time. In polydispersions, where the concentration is disregarded, the sedimentation constant decreases with the time. In some cases, the effects of polydispersion and concentration may neutralize each other, thus giving a sedimentation constant independent of the time. Reference is made to equations derived by N. Gralen from sedimentation and diffusion measurements made on cellulose and cellulose derivatives. TTD: 9-48

REACTIONS OF ORGANIC COMPOUNDS. 2d ed. W. J. Hickinbottom. London, Longmans, Green, 1948. 481 pp.

Reviewed in *Research 1,* No. 9, 419 (June, 1948). TTD: 9-48

TEXTBOOK OF PRACTICAL ORGANIC CHEMISTRY. A. I. Vogel. London, Longmans, Green, 1948. 1,012 pp.

Reviewed in *Research 1,* No. 8, 374-5 (May, 1948). TTD: 9-48

COLLOIDS. Modern colloids. An introduction to the physical chemistry of large molecules and small particles. Robt. B. Dean. D. Van Nostrand, New York; 1948; 303 pp.; price $3.75.

Reviewed in *Science 108,* No. 2794, 68 (July 16, 1948). TTD: 9-48

TEXTILE RESEARCH XII

Adhesion of rubber. Research Association of British Rubber Manufacturers. J. R. Scott, R.A.B.R.M. *Research 1,* No. 6, 265-70 (Mar., 1948).

The research program of the R.A.B.R.M. is discussed. Of interest in the field of textiles is the study of adhesion between rubbers and textile materials. Considerable time has been devoted to the development of suitable methods of measurement and the formulation of an hypothesis as to the mechanisms by which various types of elastomer adhere to natural and synthetic textiles. TTD: 9-48

German textile industry. Textile series reports; listing of reports on German textile industry, as prepared by American textile men. Anon. *Textile Industries 112,* No. 1, 87-8 (Jan. 1948).

A list of 47 reports, known as the Textile Series Reports and made available through the Office of Technical Services, U. S. Department of Commerce, Washington, is given. The reports are listed by report number, title, date, and number of pages. TTD: 9-48

Indian textile industry. Observations on the textile industry in India. Nathaniel M. Mitchell, Barnes Textile Associates, Inc. *Papers Am. Assoc. Textile Technologists 3,* No. 2, 77-84 (Mar. 1948).

The observations of a 10-week study of textile operations in India, particularly those of Tata Industries, Ltd., are presented. Comparative time studies are given for Indian and American cotton mill operations. In practically all phases of the textile situation, India's position is from 20 to 30 years behind the times. TTD: 9-48

Radioisotopes. Putting atoms to work in your plant. Anon. *Modern Industry 15,* No. 2, 50-4 (Feb. 15, 1948).

A survey of industrial applications of radioisotopes. Detergents, adsorption, and water pollution are some of the many problems that may be studied with radioisotopes by specially trained scientific personnel. TTD: 9-48

RESEARCH IN INDUSTRY; ITS ORGANIZATION AND MANAGEMENT. C. C. Furnas, ed. 574 pp. D. Van Nostrand Co., Inc., 250 Fourth Ave., New York, N. Y., 1948. $6.50.

Reviewed in *Chem. Eng. News 26,* 2224 (July 26, 1948). TTD: 9-48

Research in 1947. Textile research achievements in 1947. Julius B. Goldberg, J. P. Stevens & Co., Inc. *Papers Am. Assoc. Textile Technologists 3,* No. 2, 85-91 (Mar. 1948).

New fibers and yarns, manufacturing methods and equipment, dyeing and finishing products and operations, and laboratory instruments and techniques are briefly discussed. During 1947, more than 150 new or improved products, processes and equipment were announced and an equal number of U. S. patents issued on items directly associated with the textile industry. TTD: 9-48

Textile research. Education and research in textile industry. Ward Delaney, Inst. of Textile Technology. *Textile Age 12,* No. 1, 9 (Jan. 1948).

A brief discussion of the organization and program of the Institute of Textile Technology. TTD: 9-48.

Textile survey. Basic textile techniques. Kristin Buhler. *Ciba Rev.* No. 63, 2290-2314 (Jan. 1948).

A systematic survey is given of basic textile techniques with special emphasis on classification. The various techniques are illustrated and tabulated in the form of a chart. TTD: 9-48

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